

AMERICAN BEE JOURNAL

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MARCH, 1925



C. D. HAUSMANN IN HIS APIARY AT HILLSBORO, NORTH DAKOTA. AVERAGE CROP, 1924, 250 POUNDS PER COLONY.

BEE CULTURE IN ALASKA—Clyde Grady

MORE HONEY AT LESS COST—B. F. Kindig

MARCH MANAGEMENT IN ILLINOIS—C. P. Dadant

BEEKEEPING A REAL BUSINESS—E. W. Atkins



***"The results from WIRED FOUNDATION
were far beyond my expectations"***

Says Dr. M. C. Tanquary, Fargo, North Dakota

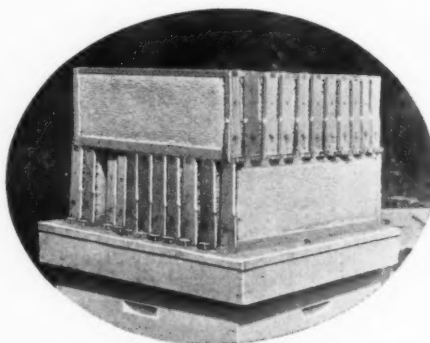
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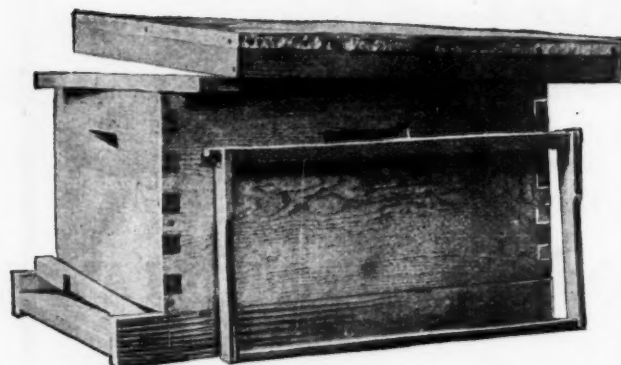
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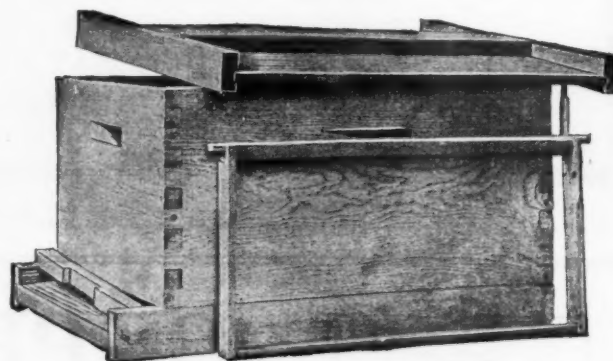
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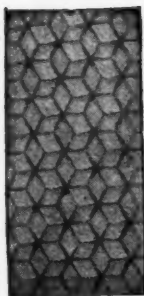
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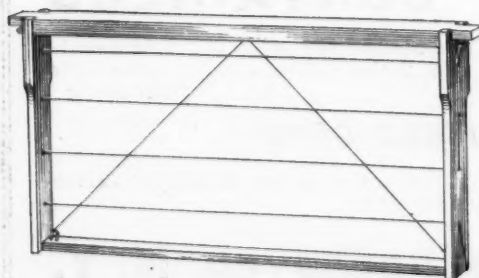
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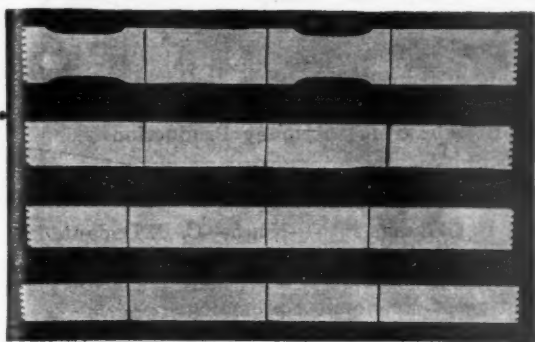


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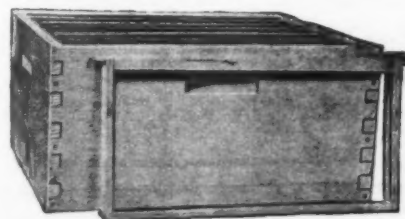


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All plain sizes	1.15	1.00	5.35	4.70	10.40	9.40

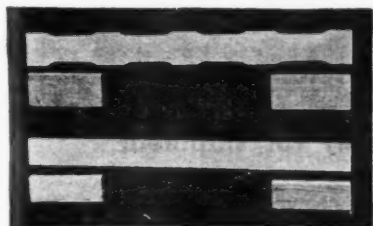
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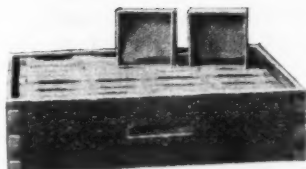


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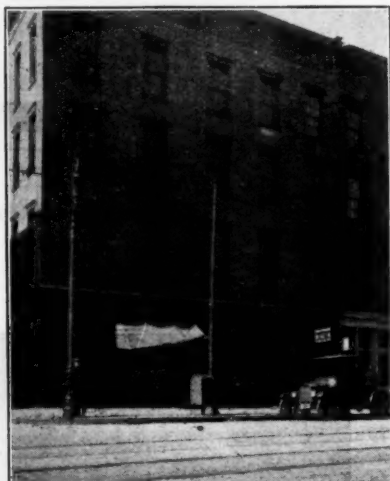
Pearl and Walnut Sts.

Cincinnati, Ohio

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Extracted Honey Supers.
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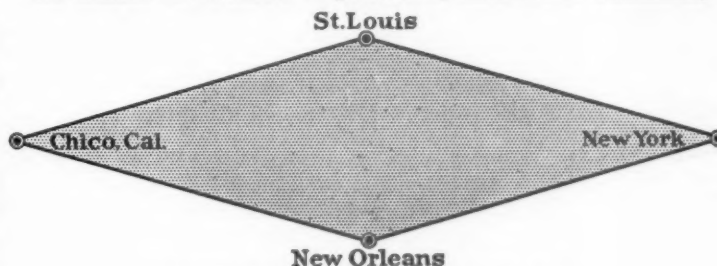
DIAMOND Hives.
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Dadant Hives.
Extracted Honey Supers.
Comb Honey Supers.
Sections.
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P. S. The boss says: "Meet Mr. Jere Fraser, Memphis, the first to the left of this group; next is Mr. Walter Severson, Albany; Mr. G. M. Creger, Sioux City in the center; next Mr. A. D. Hiatt, Lynchburg and to the right Mr. E. Ebert, Wichita. These managers are assigned to personally attend your needs, handle your correspondence and ship your orders. Each may be addressed, care G. B. Lewis Company at his branch address above."



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AMERICAN BEE JOURNAL

Vol. LXV—No. 3

Hamilton, Illinois, March, 1925

Monthly, \$1.50 a Year

Bee Culture In Alaska

By Clyde Grady.

IN Haines, Alaska, a picturesque seacoast village, nestling cosily in Mission Cove, on Lynn Canal—an arm of the north Pacific Ocean—there resides an old sourdough named Thomas Dixon Page. He came to the Golden North many years ago as a soldier, and upon the expiration of his term of enlistment accepted his honorable discharge and became a resident of the Territory.

One night, in the early spring of 1923, when the wet ground was yet checkered, here and there, with banks of snow, the old timer dreamed a dream. While he was tightly held in the arms of Morpheus he observed great piles of honey, and saw honeybees buzzing all around him—in dreamland—seeking nectar from the flowers—in the Land of the Midnight Sun.

The next day, being seriously impressed with his journey into the subconscious world of the previous night, the old sourdough went up to the village, walked down the main thoroughfare, and stopped in front of the store where there were several other old sourdoughs sitting on their accustomed boxes, in the bright sunlight, whittling away. He related his dream in detail, and concluded with the statement that he intended to order a swarm of bees. No one said a word, but the wise ones, without ceasing their arduous duties, glanced at each other without moving their heads, and winked a knowing wink. The old timer not receiving any response nor encouragement, turned around with hurt feelings, and started slowly back up the street, muttering to himself, "Gosh darn 'em, I'll show 'em, I'll show 'em," and Tom Page did. Just as he turned the corner and disappeared from sight, the wisest of the wise ones said, "Too bad, too bad, Tom has missed too many boats," and at this remark loud guffaws resounded up and down the street.

Now Tom Page wasn't crazy. He had an idea; it is just such men as he who do things and become assets to a country. His ambition has been realized, fairer far than even his fondest dreams and most sanguine expectations. Today he is entitled

to be called the Bee King of our Arctic Empire—a vast domain slightly less in magnitude than Germany, France and Spain combined—and historians will record that it was he who proved to the world that bee culture was a success in the North.

On a beautiful, sunshiny Sunday afternoon in August, while strolling



Thomas Dixon Page, Bee King of Alaska, at home in working togs.

down a street on the outskirts of the village, my attention was attracted to a little cottage, clean and neat in appearance, nestling under the shadows of the lower slopes of Mt. Ripinsky. I opened the front gate and started ambling up the well kept board walk towards the house. On my right, and all around the building were beautiful flowers—indigenous to northern soil—growing in great profusion, remarkable for their gorgeousness. The natural quiet and stillness of the afternoon was broken only by the noise made by the whirring wings of humming-birds darting

here and there—from flower to flower. To my left was a garden containing a variety of appetizing vegetables, and along the fences were gooseberries—the largest I ever saw, raspberries, currants and other native berries.

Within a few feet of the doorstep, my wife, who was following me, uttered a shrill cry of, "bees, bees," and beat a hasty retreat to the road, and at the same time three or four insects began buzzing playfully about my head. Glancing down under a little cedar tree I perceived two boxes, and to my amazement and surprise there were sure enough honeybees—and in the so-called frozen north.

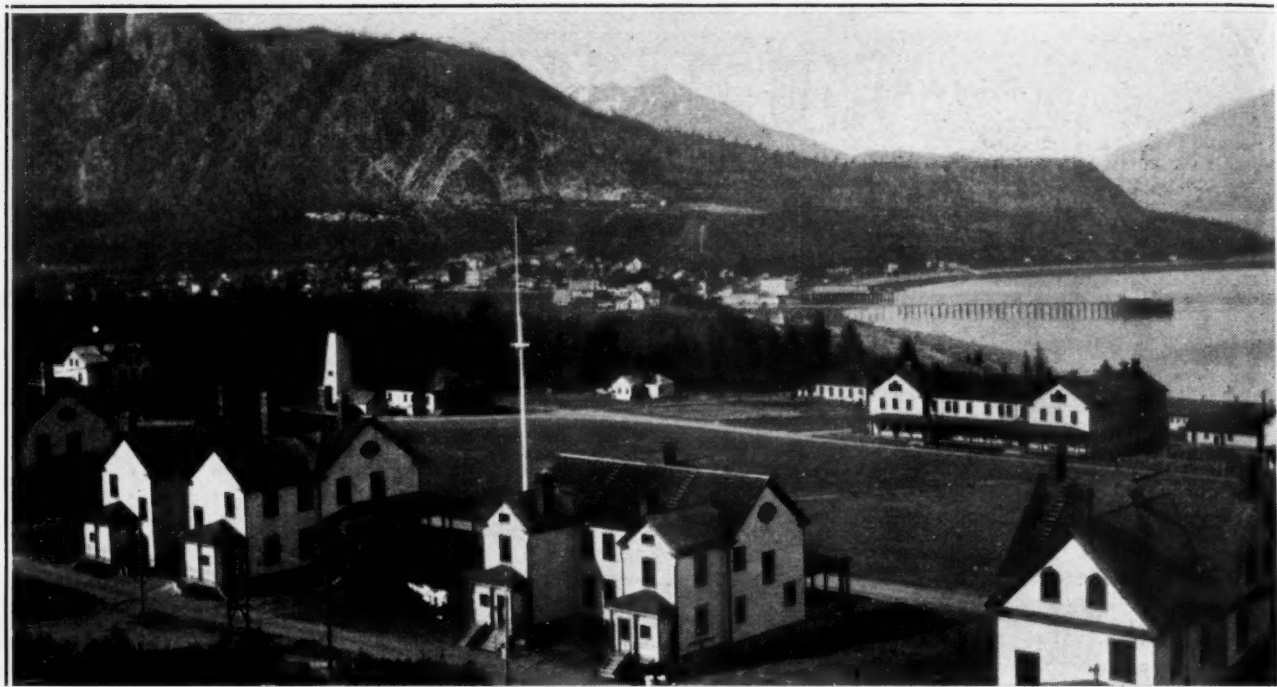
Being interested and curious, believing that possibly a novel discovery had been made, I wrote to Mr. C. C. Georgeson, of Sitka, Agronomist in charge of the Alaska Agricultural Experiment Stations, United States Department of Agriculture, requesting that he advise me as to whether or not he had any knowledge of honeybees, domestic or wild, in the Territory. That official very kindly answered as follows:

"Replying to yours of September 7th, I beg to say that as far as I know there are no honeybees, either wild or domestic, found in Alaska. Many years ago I attempted to keep at this station, and through the Department of Agriculture obtained what was said to be a very hardy bee, a species from the Carpathian Mountains. We kept them for two years, but we had to feed them on honey the year round. They could not gather enough here to live. Finally, the second winter, they succumbed.

"In regions where the fireweed is abundant honeybees could make a living in the summer time and possibly store enough for winter, but that plant is not abundant here."

So Tom Page has the only bees in American territory north of Seattle; quite a distinction.

Mr. Page ordered one hive of Italian 3-banded bees from an apiarist in Tacoma, Wash., which arrived at Haines dock, July 5, 1923. A number of them had smothered during the long journey by steamer,



Chilkoot Barracks, Haines, Alaska. This is where the author "hangs his hat."

which naturally weakened the swarm. He took them home and they immediately went to work just as though they were back in the States.

A cold weather home was soon completed for them. The first snow of any consequence made its appearance about the middle of the month of October.

About April first, 1924, during the warm days of approaching summer, some of the bees were observed to come from their winter quarters for the first time. A close watch was kept on their actions, especially during the first part of June, as they appeared to be unusually active and restless. On the seventh day of the month the neighbors were aroused by the loud, rapid ringing of a bell in the direction of the Page homestead. They hurried to the house, and saw that the air was full of bees, which settled on a bush in the yard. It was certainly an unusual Alaskan scene, for the residents of the village, many of whom—the younger

generation—had never come in contact with the makers of honey.

On the thirteenth of the month, or six days later, another swarm came out, and once more the bell began to ring, and they, too, were captured. Everything was quiet until the third day when another bunch filled the air, and finally settled on a bush. The next day they swarmed again, and the day after the performance was repeated. Neither the ringing of the bell, nor the cries of the neighbors could stop this last swarm. They made a "bee line" to the northwest with the owner on their "trail," and never ceased their flight until they reached the Adams ranch one mile distant, where they settled quietly down on the limb of a tree. Mr. Page put them in a box, carried them back home where he destroyed the queen and bunched the family with one of the smaller swarms.

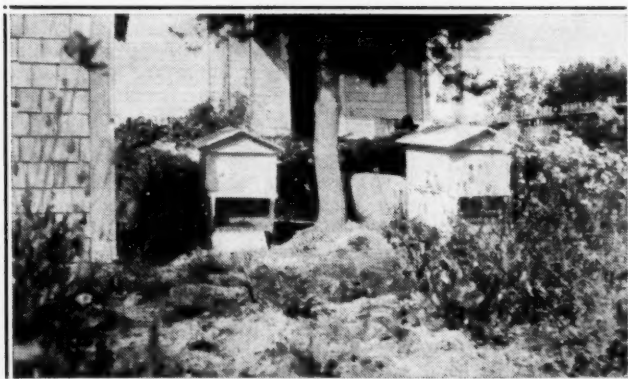
From this one hive he has four swarms, and in addition he took from the old hive—in July—fifty pounds

of delicious honey, the greater portion of which was given to the neighbors, which included the writer of this article. He also sent a jar of the honey to the southeastern Alaska fair, held at Juneau, the capital of the Territory, and was awarded a premium; an account of which was duly recorded in the newspapers.

Mr. Page, who was a Kentuckian, had some experience in the practical side of beekeeping in that state prior to coming to this country, and also worked for a well-known apiarist near Cincinnati, Ohio.

It is obvious that bee culture in Alaska has passed the experimental stage, and it has been demonstrated by Mr. Page that bees can stow away enough honey to keep them through the winter without being furnished food. He has built a larger and more commodious home for his increased family, and contemplates entering the business on a larger scale next season.

The location of this apiary is an



Two swarms of honey bees on top of the world, making honey in the land of the midnight sun.



At home under the little cedar tree in a paradise of lovely flowers. The small building to the left is the home of the original swarm.



The first snow of the season—October 16, 1924.

ideal one, being situated in a section of Alaska, where the effect of the warm Japanese current is very noticeable, and in addition it is screened and protected from the cold northern winds by the high mountains. In this particular locality the summers are extremely mild, with moderate rainfall, and in winter the thermometer

rarely ever drops below zero; however, there is a great amount of snow, which covers the ground several feet in depth. There are wild flowers of numberless varieties; fruit trees, clover (red and white), and a diversified forestation exuding honeydew in prodigious abundance. Alaska.

Shall Beekeepers Operate on a Non-Profit Basis

By E. S. Miller.

LET us suppose that the price of extracted honey in ton lots in 60-lb. cans, granulated, is 12c per pound, which is about the present price in the Chicago market. Then the cost in pails can be shown about as follows:

	Per lbs.	Per 5 lbs.
Price, wholesale	\$.12	\$.60
Cost of pail and label	.02	.10
Labor	.01	.05
Storage, fuel, etc.	.01	.05
Selling and delivering to grocers	.02	.10
Advertising, interest, de- preciation of equip- ment	.01	.05
Profit	.01	.05
Total	\$.20	\$1.00

From the items listed it would seem that if the beekeeper is to make the small profit of one cent per pound, he should demand from the grocer at least \$1.00 per pail in dozen or half dozen lots. Selling costs and payment for labor must not be counted as net profits. Grocers in retailing usually figure a gross profit of 20 per cent on the selling price or 25 per cent of the cost. One cannot afford to canvass house to house or retail honey at anything less, since the grocer can operate on a smaller margin than can be done by the average canvasser. Therefore, the retail price should be not less than \$1.25 per 5-lb. pail when the ton lot price of honey, granulated, in 60-lb. cans, is 12c a pound. So also, if comb honey is

worth 20c in large lots, it should sell to grocers at about 24c and retail at 30c.

In the list above perhaps I have omitted some of the costs, as when honey is purchased and shipped from a distance. On the other hand, the beekeeper may be able to cut the corners in some instances. He may not count his time as of any value. He may have access to cheap fuel, he may not advertise, he may haul his crop in the family flivver or his equipment may be of little or no value. But in such cases why give the buyer the advantage of these "economies"? It may not generally be understood that by eliminating profits in marketing less, not more, honey will be disposed of, for aside from beekeeping, few people are willing to engage in merchandising unless paid not only for their labor, but something besides. As long as beekeepers continue to cut prices and to compete one with another, each trying to undersell the other fellow, just so long must there be a loss in marketing our product. There is little or no profit for the average beekeeper in the average locality in the production of honey, and there is no profit at all in the selling end unless a fair price is obtained.

It seems that many are imbued with the idea that "bees work for nothing and board themselves" and that the beekeeper must do likewise. Beekeepers now are selling 5-lb. pails of honey at 60c and 75c in small lots, but if one tries to buy their whole crop, they want 15c a pound and ex-

pect the buyer to furnish the containers. The usual excuse for underselling is that they cannot otherwise dispose of their crop or that some other fellow sells at a lower price which they necessarily must meet. So they fill up the retail grocery stores at the grocer's own price and then proceed to sell to the grocer's customers at the same price. They wouldn't dispose of the whole lot for less than 15c a pound for "that's what they are getting" and besides the producer who would take it all might make too much profit.

I am of the opinion that if business principles as applied to marketing were taught in our meetings and through the journals it would benefit the industry far more than is done by encouraging greater production. But the majority of beekeepers never attend association meetings and many do not read a journal, hence it is difficult to reach them. Until beekeepers can, in some way, be educated to the necessity and importance of co-operation rather than competition we must expect low prices and doubtful profits.

Indiaha.

Active Workers

In looking over back numbers of the American Bee Journal I came across the article of Prof. Merrill, of Kansas (page 559, Nov., 1923); also comments by editor in editorial columns (Dec., 1923) and Merrill's replies (page 622, Dec., 1923). I had a case that coincides very well with his experiments.

For the season of 1924 I had one colony out of 22 that gathered more honey than any of the others. I had queens from four different breeders, some of them were extremely prolific. From this one the bees would fly when it was too cool for the others and also work later in the day. I had no way of measuring brood or computing the number of bees to know how many died, but it seemed some of the hives had twice the number of bees and all considerably more. They would fly in and out about like a four-pound package. I know they were larger and when coming in were more distended with heavier loads; as near as I could tell, they had slightly longer tongues. I raised a number of queens from this stock, about 50 per cent of these queens produced bees like the mother queen produced. Her bees are **not pointed** and so wasplike as the other bees I had. They were all Italians.

C. A. Bird, Iowa.

Death of Prominent Wisconsin Beekeeper

We are informed of the death of Mr. L. J. Bergh, of Mt. Horeb, Wis., which occurred in early January. Mr. Bergh was a little more than 70 years old and had kept bees continuously, in the neighborhood of 100 colonies, for many years. The sympathy of our readers goes to the family.

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Visit at Washington

Mr James I. Hambleton was at Chicago at the time of my visit at the Department. In company with Dr. Sturtevant, who came after me at the hotel, I visited the Bureau of Entomology at Washington and met both Dr. Howard, the chief, and Dr. White, the man who discovered the real bacillus of American foulbrood. I talked French with Dr. Howard, who has been to Europe a number of times and speaks French fluently.

At the apiary building, at Somerset, I was shown the manner in which they examine samples of diseased brood to diagnose the disease. They have a special room for that purpose.

I saw the most elaborate way of packing comb honey, as put up by Orlando W. Bedell, Earlville, N. Y.; each case lined with corrugated paper and each section isolated and packed in pasteboard. That is the limit of perfection in shipping honey.

The different shippers of bees in packages have been requested to send to the Bureau samples of their methods of packing and twelve different shipping boxes were gathered there. The most peculiar and perhaps one of the best is the one in which a shrub branch is fastened securely inside for the bees to cluster on during the trip. I believe this is better than cross sticks or screens.

A large number of choice samples of section honey from all parts of the country are gathered in a room to investigate the tendency to granulate, of the different kinds of honey.

There are many interesting things at the Department and it would take several pages to merely mention them.

The North Carolina Meeting

The meeting at Raleigh, the first I ever attended there, was very interesting, for the beekeepers were all eager to learn and fully able to discuss bee questions. In fact, we rarely have meetings now-a-days where the beekeepers are as active in giving their experiences and asking questions.

Friend Pettit, of Ontario, was there accidentally. Having undertaken a trip from Canada to Florida with his automobile, he was stopped at Southern Pines by the muddy roads. So, having nothing to do, he came up to Raleigh and was on the program. All who know him are acquainted with his methodical ways and the quiet and positive tone of his statements. It is a pleasure to hear him.

There were splendid talks by E. L. Sechrist, of Washington and C. L. Sams, who has had his headquarters at Raleigh for a number of years and is well posted on North Carolina conditions.

J. E. Eckert, the Secretary of the North Carolina Association, is the soul of the meetings. He appears to know just what is wanted and is making great efforts to urge the beekeepers along towards greater success. He is a live wire and I could understand his feelings when he told us that although there are over 30,000 beekeepers in North Carolina, only a small percentage of them use modern equipment. He has a list of some 700 to whom he sends publications and requests for reports of crop conditions, etc. But only a couple dozen take the pains to reply and show that they are interested. The "North Carolina Beekeeper," published annually, is not appreciated as it should be, for it gives important information concerning North Carolina bee interests.

Volume 1, number 5, published last year, was mentioned in the American Bee Journal, and I was very glad to hear Mr. Eckert, at the meeting, state that this men-

tion brought him a dozen requests for the booklet, from outside of the state, and even from foreign parts.

With so active a Secretary, it is a mistake for North Carolina beekeepers not to stir up interest in co-operation, to enable them to sell their honey more readily and buy their supplies at a discount. But it seems to take time with beekeepers, as with farmers, to develop the idea of mutual help. The ones who attended the meeting however, appeared to appreciate that point.

It is not only in North Carolina, but in many other states, that the beekeepers need urging, to stand shoulder to shoulder, to prevent the spread of disease, to sell their honey or buy their supplies to the best advantage.

Wintering cannot be much of a problem in the Carolinas, for at the date of the meeting, January, 20-22, the bees were flying freely; there was no snow on the ground and boys and girls were playing tennis and other games bareheaded in the yards, while even as far south as Washington, D. C., snow was covering the fields and the ice barely thawed in the sunny spots.

More Honey At Less Cost

The above is the title of an address by B. F. Kindig, of Michigan, which will be found in this number and which was delivered by him at Columbus, February 5th. It shows a decided tendency by the beekeeping public to adopt large brood chambers. Mr. J. H. Diebel, who presided the meeting in question, appeared to think that it was a deliberate advertisement of the Dadants and their wares. But I told him plainly that the Dadants did not manufacture hives for sale and did not have any particular advantage in the sale of any one style, that we never did sell hives in Europe, although the Dadant hive is apparently the standard hive there.

This unexpected support to the large brood chamber, by as noted a man as Mr. Kindig, and based upon disinterested investigation is another step forward for the benefit of large brood chambers on deeper frames than the Langstroth. The fact that one's equipment of Langstroth ten-frame hives may be used for supers, thus saving the waste consequent upon a change of system, is also working strongly in favor of large brood chambers.

Sainfoin Seed For Trial

Quite a number of our readers have written us asking whether they could procure seed of the "sainfoin" mentioned by Mr. Wilson on page 55 of the February number. As sainfoin was tried at different times in this country with unsatisfactory results, we did not think it worth while to order any seed. But it might be that, if tried the country over, some success could be achieved. So, let those who wish to try it write us, with the understanding that it will not be available until next season early. We may then order a sufficient amount to enable each of those wanting it to make a trial of it. Be sure and state what quantity you wish.

Bees Wintering Well

In the section of country surrounding us the bees are doing very well, in spite of some seven weeks of confinement during December and January, with below zero temperatures a good part of the time. They had a flight early in February and, at our home apiary, only one colony was dead. You may be sure it was a weak one.

Good honey, strong colonies, shelter from winds, these are the indispensable requirements, and colonies will stand a great degree of cold with but little suffering.

Short Course At Cornell

It would have been a great pleasure to be at Cornell, January 26 to 31 if it had not been for the snow, which made going laborious. Just think, 3 ft of snow! Take a yard stick and stand it up and see what 3 feet of snow means. In a hustling place like Ithaca, where so many young people run about, it cannot prevent traffic very long. But, nevertheless, it stopped much of the travel. Hundreds of automobiles were marooned, near buildings, on the streets, in the country. Many of them looked like castaway rubbish, hidden under the piled snow. Trucks were busy pulling them out for several days. Traveling on the train, one could see no life at farm houses, in the morning, except for the wisp of smoke rising from the flue tops. Dogs, chickens, cows or human beings appeared to hide behind the immense snow blanket. On the railroad tracks, thousands of men were busy hauling away the white coat, soon blackened by smoke.

The Cornell Short Course was attended by some 60 students and beekeepers. There was a good list of talent and very few failed to appear. As usual, I was booked for an address on "The Large Hive." There is no doubt that the large hive is making its way, judging by the number of people who tried it and spoke highly of its results.

I did not realize that I was the main champion of the large hive till, on an invitation of Dr. Phillips to his home for dinner, with a dozen others, Mrs. Phillips called my attention to the fact that she had the names of the guests in front of their plates, on small pasteboard skeps. and that mine was larger than the others. I found out later in dozens of places, that the large hive is associated in the mind of beekeepers with the name of Dadant.

Foulbrood is mentioned everywhere. The fight is on. Sooner or later beekeepers will understand that they must unite to fight it successfully.

The reason for the late development of American foulbrood in the body of a bee larva, as compared with the development of European foulbrood in early stages detailed by Dr. Sturtevant in his bulletin K-128 on "the Development of American Foulbrood," was fully explained by Dr. Phillips. The bacillus of American foulbrood cannot develop in a 2 or 3 per cent solution of sugar. So the development of *Bacillus larvæ* is delayed until the larva has fully consumed and transferred the sweet pap given it. For that reason, it is not until the transformation into chrysalis has begun that American foulbrood develops. But the bacillus of European foulbrood, *Bacillus pluton*, readily grows in the sweet flesh of larvæ. Hence, the early destruction of brood with European foulbrood. However, if the colonies are weak and the brood is neglected and not fed as required, the larva soon digests its sweet food and *Bacillus larvæ* may develop earlier.

The discussion of honey and its adulterations brought out the assertion, by Dr. Phillips, that honey, which was at one time one of the most commonly adulterated foods, owing to the cheapness of commercial glucose, is now one of the least adulterated, owing to the pure food law which makes adulterators liable to United States Courts for punishment.

Mr. C. Vaillancourt was at Cornell and delivered an address on the International Congress of last fall and also another address on "Marketing Honey in Quebec." In the course of this address he made a statement which brought a little excitement. He said that the legal weight of honey, in Quebec, was 14½ pounds to the gallon. This looked excessive to many beekeepers until he informed them that Canadian gallon is twenty per cent larger than the American gallon. Here is another argument in favor of a uniform system of weights and measures throughout the world.

The meetings at Albany, Schenectady, Syracuse and Buffalo were very slimly attended, owing to the incessant snows and consequently more or less impassable roads. But wherever I went, the question of foulbrood and foulbrood eradication was apparently the leading one. At Syracuse quite a lively time was had, because a beekeeper asserted that we were all wrong, that the drones were the cause of foulbrood and that we could not expect to eradicate the disease till we did away with the drones. Of course, this could not be accepted by

the inspectors and it was easy to see that this foolish assertion has been more or less forced to the front at different times.

The peak of the meetings was at Columbus, Ohio, February 5th and 6th. A very large hall was pretty well filled with about 180 beekeepers. There was no snow to hinder the attendance and their wonderfully active secretary, Miss Florence Naile, had brought together plenty of talent. She was seconded by two active men, Mr. F. S. Moore, president, and Mr. J. H. Diebel, vice-president. E. R. Root, J. I. Hambleton and B. F. Kindig, of Michigan, and T. C. Johnson, of Indiana, were there, and the lively Fred Muth presided at the banquet and was toastmaster on the evening of the 5th.

The Ohio beekeepers may congratulate themselves on having as active a secretary as Miss Naile. A good secretary is the soul of an association.

Bacillus Alvei vs. Bacillus Larvæ

In the "New Zealand Fruit Grower and Apiarist," for November, page 104, W. E. Barker states that "Foulbrood is *Bacillus alvei*, having been discovered by Cheshire, therefore he has a priority of right in naming it. *B. larvæ* is a Yankee dodge to evade the then difficulty, as to how the *Bacillus* appeared in the juices of the healthy bee, and also in the larvæ, and I object to the term as incorrect and misleading."

We protest against this incorrect and misleading statement. All informed scientists are now aware of the fact that both the bacilli above named exist and are separate organisms. They are as different as the oak tree and the beech. *Bacillus larvæ* is the cause of American foulbrood, while *Bacillus alvei* does not cause any disease, but occurs usually in larvæ that have died of European foulbrood. The discovery was made by Dr. G. F. White, of the U. S. Department of Agriculture.

Cheshire, who discovered *Bacillus alvei*, did not know that there were two distinct brood diseases, and took the effect for the cause. We therefore insist that the name "*Bacillus larvæ*" is not a "Yankee dodge," as our New Zealand friend so cunningly infers. By referring to the "Bee World" for December, 1924, it will be seen, page 106, that "the name *Bacillus larvæ* for the causal organism of American foulbrood has now been accepted in Germany, also."

Dr. White, the noted bacteriologist who made the discovery that *Bacillus larvæ* is the real cause of American foulbrood and that *Bacillus alvei* is only a bacillus of putrefaction, which cannot cause the disease, has promised to give us an article explaining how a bacteriologist can differentiate between the causes of different diseases and positively pick out and describe the active cause of a disease.

Biographies of Leaders In Beekeeping

The Cornell Apis Club has adopted a method of making the former lights in beekeeping known to the beekeepers, by having some of its students study the lives of these men and write them up.

Thus far they have published:

Francis Huber, by Everett Oertel.

L. L. Langstroth, by H. A. Merrill.

Moses Quinby, by P. R. Noodham.

Charles Dadant, by E. J. Anderson.

Dr. C. C. Miller, by E. F. Phillips.

A. I. Root, by R. B. Willson.

Isaac Hopkins (of New Zealand), by R. L. Parker.

These biographies have been published in typewritten form, on good paper, and offered to the beekeeping public for 50 cents, postpaid, for the lot, about 30 pages. As this is not a money-making scheme, we have volunteered to mention it in our reading columns. Send your orders for them to Dr. E. F. Phillips, Cornell University, Ithaca, N. Y. The funds are to be used toward a New York State Library Endowment.

Queen Introduction

Morley Pettit introduces queens by putting the queen alone in a flat cage, closed at one end with pieces of crushed comb and slipped into the entrance of the hive. He does not put any workers with the queen,

March Management In Illinois

By C. P. Dadant.

IN our so-called temperate country of ice and snow, in the Middle States, March is one of the most dangerous months for the bees. It is too cool, almost every day, for the bees to fly; yet it is too warm for them to remain without breeding.

Perhaps this is the best time to leave the bees alone. If they have had good honey, or sugar sirup, they may not have produced any great amount of moisture, although I know that every colony produces more or less moisture from their exhalations. A very good sign, on a mild day, following a period of great cold, is to see some water running out of the entrance. If the colonies are properly placed, the entrance is the lowest point in the hive. This not only permits the moisture to run out, but it also helps the bees in carrying out dead bees.

If the honey has been bad, one will very often see bees overloaded with feces drag themselves to the entrance and sometimes discharge their abdomen within the path of the colony. This is one of the worst things. The only thing to do, if there is much of it, is to lift the hive from its stand and put it upon a clean bottom board.

In a steady winter, with good food in the hive, colonies, even if only sheltered from winds, may not lose more than a couple of dozen bees. Such colonies, whenever you disturb them, will show themselves at the entrance promptly. They probably have brood before the first of March. If pollen is lacking, they will hunt around sawdust piles at every flight. We are told that the giving of flour to them is useless, that the larvæ cannot digest the starch contained in the flour. I do not know whether there is much in this; but I do know that we have actually given our bees hundreds of pounds of flour, in open boxes, placed in some protected spot, in the sun, near the apiary, that the bees remove it readily, on every warm day, and actually bring honey form the hive to dilute this artificial pollen into a paste which they load into their pollen baskets, just as they do pollen a little later. Some seasons, there is but little opportunity to give them this substitute, because the soft-maple trees and other early blossoms supply them with all the pollen they want. But during some backward springs we have seen bees come to the flour for a week or more, at every stroke of sunshine.

It is sometimes difficult to bait the bees to the flour boxes. We usually do it by placing a little of the flour on some old combs, in the flour boxes. After the bees have gained the habit of coming, the flour is packed into the middle of the open box in a little mound pressed with the hands. Otherwise any bees would be smothered in the dust raised by their wings in hovering over the feed.

Any kind of flour is acceptable to them. We usually give them cheap wheat flour or rye flour. There is no doubt in my mind that bees do use it profitably for the brood.

When the pollen begins to appear, we can easily notice it by watching the entrances of the hives; we will then notice some bees coming in with a differently-colored load. It is necessary to cease feeding flour, as many bees, being accustomed to this easily-reached pabulum, might continue for quite a while. When the boxes are removed we see bees hovering over the spot for quite a little while.

We have never tried giving them water in the combs within the hive. Yet, it might be a good plan, for we know that many bees get chilled going after cold water in the early days of broodrearing. The place where they get water is of some importance, as we do not wish them to become accustomed to an undesirable watering place such as a horse trough, or some neighbor's cistern or well pump. If we take pains to attract them to a watering spot under our control and away from mischief-causing activity, we may save some annoyance to ourselves and others.

Bees should have been supplied with enough food in the fall to carry them well through the spring months. But things are not always done as they should be done. So at times we may find colonies that are short. If the cushions in the upper story are properly arranged, it will not be much trouble to examine the dubious colonies. A glance should be sufficient. If food is needed an inverted jar or tin of sugar sirup or honey, with a lid pierced with little holes may be given right over the cluster. An empty tin of any kind, if clean, may be used to give the food, and if no cover is available, a piece of muslin tied over the mouth of the tin or jar, will be sufficient. But in order that the food be not wasted, it is advisable to invert this cloth covered receptacle over a dish to receive the first flow, which is quite free until the atmospheric pressure acts upon the lid.

Food given to bees in spring should be warmed, as they take it much more readily.

On warm days, some beekeepers feed their bees, in the open, upon very watery sirup, not over two pounds of sugar per gallon. It is a little difficult to attract them to it. But after they have been baited, they take it readily and it does not induce robbing, because of the very small amount of sweet contained in the liquid. This actually supplies all the water that is needed for brood-rearing.

Bees wintered in the cellar should be removed on a warm day, so they may have occasion to void their bowels of the fecal matter, before night. If they are taken out on a cold day,

they may be compelled to stay in the hive several days, and in that case they may suffer much and many bees are lost that would otherwise have been saved, for their uneasiness compels them to seek relief in flight.

We consider it important to put the hives back on exactly the same spot occupied by the colony, before winter. I have stated elsewhere how we found out that some bees at least remember the old spot. There is less chance for fights and a mixup, which is always to be avoided, if this care is taken.

Hives that have been kept in the cellar should be protected in some way during spring. The lack of protection, if very cold weather should return, is one of the causes of spring losses and dwindling of colonies wintered indoors.

The time for removing them, according to Dr. Miller, who perhaps had the most experience in the matter, is at the time of soft maple bloom, when the very first trees open their blossoms.

Personally, we ceased cellar wintering long ago. We practiced it for 18 years in succession. If we could know beforehand which winters were to be severe, we would put the bees in the cellar during those winters, but in our latitude of Central Illinois we find too many mild days in winter to make cellar wintering desirable here.

A Creditable Bee Exhibit In Denton County, Texas

A successful beekeeper's exhibit was held for the first time in connection with the Denton County Fair the first part of November. It testified to the enterprise and enthusiasm of the beekeepers of that section, and was at the same time an example of what beekeepers can and should do.

A great deal of credit for this exhibit is due the County Agent, Mr. G. D. Everett, as well as to Mr. M. D. Fagg, in charge of the exhibit, who, although himself not a beekeeper, spared no effort to secure a creditable display.

The exhibit was the best that we have ever seen displayed for the first time by the beekeepers of any section. This county, while it is only mediocre so far as honey production is concerned, has a group of enthusiastic beekeepers determined to make the greatest success with their bees possible under existing conditions. That they understand how to accomplish this is evidenced by the fact that certain ones, merely as a side line in connection with other farming enterprises, have secured honey yields in a year's time, valued at four and five hundred dollars.

Four beekeepers exhibited: J. W. Lambert, Phil Hally, W. K. Knight, and Dr. W. E. Botts. All had excellent displays and the prizes were rather evenly distributed. The entries consisted of extracted honey, bulk comb honey, comb honey on frames, bees on frames, and beeswax.

R. R. Reppert, Texas.

The Struggle To Success

By Dr. J. C. Hutzelman.

ABOUT twenty years ago, I became the possessor, for the first time, of a colony of bees afflicted with American foulbrood. At that time I had heard a great deal of talk about the big losses due to foulbrood. Naturally, I learned to fear and dread it. When I did come upon my first infected colony, which that year happened to be the only one infected in an apiary of sixty, I took a deep sigh felt a lump rise in my throat, and was quite sure that the rest of my colonies would soon have it. But, I had no more foulbrood that year. That diseased colony was killed and burned up, hive, combs, frames and even the lid.

The following ten or twelve years I had, throughout the course of each year, from five to ten colonies infected with American foulbrood. Whence it came or where the bees got it, I never learned. I could not well place the blame on my neighbor beekeepers, for there were no bees within three miles of my bees. Consequently, I believed that either my colonies were infecting one another or that I was carrying the disease from hive to hive. I noticed on several occasions that when a single hive became infected, the next hive on either side became infected also. This certainly looked like I carried the infection or the bees carried it. Possibly, in some cases it was both. All these bees received the same treatment, which consisted of burning the entire hive in a hole dug in the ground, and the ashes covered over with earth.

Until the year 1909 I kept all my bees in one apiary at home, and was keeping foulbrood below a 10 per cent infection of my apiary. I then had about 150 colonies and had experienced several poor honey seasons. I started two out-apiaries of thirty colonies each. That was where I got my first full dose of American foulbrood. One of those out-apiaries became 100 per cent infected the first year. In this case it proved to be the neighbor's bees that started the foulbrood. I also had my usual quota of foulbrood colonies in the home apiary, and about 10 per cent in the other out-apiary.

I began to feel that I was "slipping" considerably in the bee business. Fortunately, I had just finished a course in bacteriology. I had learned the various methods of sterilization and disinfection, and knew that the bacteria which infected bees were subject to the same influences as are bacteria in general.

I stopped burning up good hives and frames. I shook the bees as described in books, and scorched the hives. After cutting the combs out, I boiled the frames to sterilize them for use again.

In this manner I went onward until the year 1920. I was winning with American foulbrood in every way except that the combs were a complete loss. During 1920, I had

an unusual amount of American foulbrood on hand. Melting up hundreds of perfect combs began to make my gain equal to my loss, in spite of the fact that I had been having fairly good honey crops each year.

"Necessity was the mother of invention."

Facing the loss of hundreds of perfect combs, a series of experiments was started and continued to the end of the year 1922, when the alcohol-formalin solution was developed. Without this solution as a weapon against American foulbrood, I would not care to continue increasing my bees and apiaries. Now, I am progressing onward and upward, full of hope, with foulbrood frequently present within two miles, to the North, East, South or West, of my bees.

During the season of 1924 there was not a single colony with foulbrood, outside of what I bought or produced experimentally, in my apiaries totaling 300 colonies.

My advice to the average beekeeping public:

Any beekeeper who can treat an infected colony by shaking and destroying the combs and get rid of foulbrood, can go a step farther and sterilize his combs by following a few simple directions. Possibly, most foulbrood is spread by the beekeeper himself, either through lack of knowledge regarding the disease, or through neglect.

Failure in treatment of American foulbrood is more apt to be due to a lack of understanding of the principles involved, than to carelessness.

What May Happen

Nearly two years ago, I received an order for 50 gallons of solution from a beekeeper who was a perfect stranger to me. At that time the solution was a new article on the market. I made a personal call on this beekeeper, who lived 20 miles distant. He had nearly 50 two-story hives in his yard. Every hive was filled with combs, but scarcely a bee was to be seen. They were all dead. He took me into his honey house, which was once a woodshed. Here was a mess of diseased combs strewn about, and some stacked up like cord wood. Pieces of comb had been trampled on the floor until it was an inch thick in places. I hesitated to sell to this beekeeper, because I could not see how he would ever get rid of foulbrood with such a mess all about. But he seemed to be bent on disinfecting everything, so I gave him instructions how to clean up his place, and told him to let me know when he was through, in order that I might come back to make an inspection to see if everything was in good shape to commence disinfecting combs. In about three weeks he let me know he was ready. The scene his once messed up storeroom for

combs presented a revelation. He had placed all combs in supers stacked up evenly and scrubbed the floor with boiling lye water. I felt there was hope for him. This man's bees today are free from American foulbrood, and he is using all his former equipment, including combs.

Now, he is not what I call a careless beekeeper. He did not know a few things that are necessary to do in combating American foulbrood. Thus it is perhaps with hundreds of beekeepers who are playing a losing game with foulbrood. How easy after we know how!

Ohio.

New Breeders' Certificates For Texas

We have been asked by numerous breeders to put out the queen breeders' certificates printed on cards to be attached to the shipments. It has been decided to do this. In the past the smaller shippers have made their copies at home with a pen or upon a typewriter. This plan has several disadvantages. It consumes considerable of the beekeeper's time and the copies are not always legible. Last, but not least, is the fact that some of the postmasters are objecting to accepting such certificates. By having the certificates put out from here we can, I believe, get an absolutely uniform certificate at a comparatively low price. It will also save the queen breeder the trouble of having them printed. We will be able to furnish these certificates at 40 cents per hundred. In no case can certificates be supplied in lots of less than one hundred.

The inspectors will take your order for the certificates when they make the inspection and the certificates will be sent to you as soon as they are printed, which will probably be the next working day after the order is received at College Station. The inspectors are authorized to receive payment for the certificates when they take the order and to furnish you with a receipt for the amount paid them. There will be no charge made for transportation, as this is included in the price of the certificates.

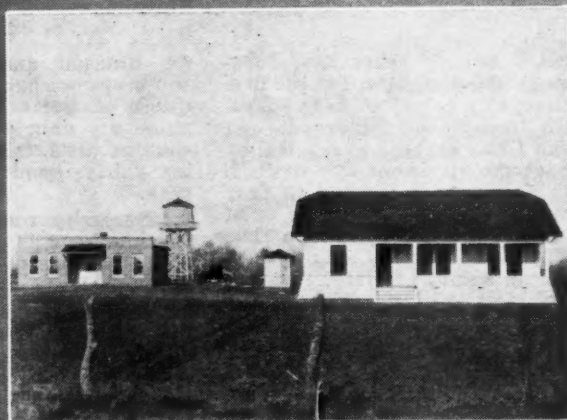
There will be no change made in the wording of the certificate. The queen breeder's name and address will appear on the certificate the same as in the past. Certificates other than those furnished by our office will not in the future be considered as official.

We are asking the co-operation of all queen breeders to make this new plan a success.

C. S. Rude,
Chief Foulbrood Inspector.

"Honey Scented" Slogan for Tea

"Honey scented"—referring to a brand of tea—was one of the slogans registered by a San Francisco tea concern with an advertising publication.



At the left, the dense growth of cactus, scattering mesquite and other trees that cover the land about the station. At the right, the Texas Apicultural Experiment Station. The brick building is the laboratory, the small center building is the weather station, and at right the apiarist's residence.

The Texas Apicultural Station

By Frank C. Pellett.

THE Texas Apicultural Experiment Station is a unique institution. Other states are conducting research work in beekeeping but probably nowhere else in the world is there an experiment station devoted exclusively to beekeeping. The Texas station is located about twelve miles from San Antonio in what is thought to be a typical beekeeping section. It was the design to establish the station in a situation where the flora and surroundings would be in every way similar to the average beekeeping location remote from a city.

Ten acres of land were purchased at the start, but the work of the station is already reaching a point where it can be readily seen that more land will soon be necessary. It does not require much room for the actual apiary site, but the plans include extensive planting of common honey plants not found in the state as well as others which promise to be of value to the bees and which at the same time may find a place on the average Texas farm.

It has been my good fortune to visit this station on two occasions. The first time was when the work was new and the laboratory was nearing completion. The second visit found a great change, and it is now possible to see something of the plans of those who have the work in charge. Much of the time since the station was established has been occupied in clearing the land and putting up buildings so that experimental work has been slow in getting under way.

The land was covered with a heavy growth of cactus, scattering mesquite trees and such shrubs as brazil, Mexican persimmon and others common to the region. The cactus in this section grows luxuriantly, individual specimens often being as high as a

man's head. Although the station land has been cleared, there is plenty of similar growth on the lands surrounding it in every direction. Under favorable conditions there is something for the bees every month in the year, although, of course, in this dry climate there are long periods of drouth when there is no nec-



H. B. Parks, Apiarist, at the Texas station, beside a specimen of cactus as high as his head.

tar to be had. On January 6 I found the bees working freely on mistletoe.

Outyards located under different conditions in several places, are supervised from the station. It is expected that, at the station yard and its outyards, conditions similar to those of important beekeeping sec-

tions of Texas will be met. The work under way includes a number of projects which touch beekeeping at many different points and will require many years to complete.

The Staff

At present three men are busy at the station. H. B. Parks, Apiarist, is in charge, assisted by A. H. Alex, who is the queen breeder. A laborer is also employed to assist in planting the grounds and for such work as does not require special training. Parks is a man whom it is a rare privilege to know intimately. He is a naturalist of the old school and has a rich fund of information concerning both animal and plant life over a wide scope of country. He enjoyed an unusual opportunity for observation from Alaska to Texas and as far east as North Carolina. On one occasion he spent eighteen months in constant travel in visiting the native tribes of Alaska. Mr. Alex is a practical beekeeper who made a special study of queen rearing, and they make a strong team for the investigation of beekeeping problems.

A study of the wintering problem as applied to Texas conditions has been under way for some time. The climate is very mild in this region, with an occasional stormy period when the temperature drops below freezing. Only for short periods does it get cold enough to require the bees to cluster. Results so far obtained indicate that south of Austin, winter protection, other than a suitable windbreak, is not desirable. Spring, protection, however, serves a very useful purpose. After spring brood-rearing is under way there is likely to be much loss from chilling of the brood during the cold storms which are prevalent at that season. It is becoming more apparent every day that every locality offers a winter problem

peculiar to itself and that special investigation is necessary to enable us to adopt the kind of practice best suited to local needs.

A preliminary plant survey of the state has been completed and the results will shortly become available through bulletins from the station. Texas has a greater variety of honey plants than any other state, with the possible exception of California. The region 20 miles north of San Antonio offers an entirely different class of plants than are found ten miles south of that city. Several different plant associations exist in different parts of the state, although conditions are usually similar over wide areas. It is planned that the first bulletin relating to the honey plants will be general in its nature, describing the important plant associations to be found in different districts. This will be followed by a series of bulletins describing in detail the important plants together with their time of blooming, nature of honeyflow and other information of value to the beekeeper. In connection with the plant studies, much data concerning the origin and nature of propolis has been secured and probably some new facts concerning this substance will shortly be available.

Some Practical Experiments

Large numbers of queens are reared each year and distributed to Texas beekeepers. In connection with the queen breeding studies special attention has been given to the age of larvæ at the time of grafting. Contrary to the general belief, it has been found to make little difference whether the larvæ be just hatched or whether they be one or two days old. This experiment, however, has not been completed. It has also been found that young queens in a breeding yard seldom meet with drones other than from their own hives when the virgins are mated from nuclei. They find a large per cent of pure matings when pure drones are present in the native hives, even though other drones may be near at hand. They find also that color of queens cannot be depended upon to determine whether their mothers are purely mated. Anything which delays the emergence of the young queen affects her color. A chilled cell results in a dark queen, but her offspring reared under normal conditions will be of normal color. A bulletin, "A System of Queen Rearing," is now in press and will soon be available. Some of the conclusions are likely to result in considerable discussion.

Now that the buildings have been so nearly completed, the experimental work will proceed with less interruption. From the number and variety of problems under consideration it is safe to promise that much interesting information will shortly be forthcoming from the Texas station.

(The above experience on color of queens tallies with my private experience.—C. P. D.)

National Honey Week Campaign

Maximum Advertising at Minimum Cost

"Eat Honey the Flavor of Flowers"

By H. F. Wilson.

A NATIONAL Honey Advertising campaign has been the desire of beekeepers and those interested in marketing honey for a long time and, while efforts along this line have been made by the American Honey Producers' League and the A. I. Root Company, no thoroughly successful campaign has yet been put on by the beekeepers themselves.

The nature of the beekeeping industry at the present time is such that a National Advertising Campaign as conducted by private firms and co-operative associations cannot be carried out because of a lack of capital to finance such a campaign. It therefore becomes necessary to use a different scheme in advertising honey and the only successful campaign that can be carried on at the present time is one whereby individual beekeepers and individual associations combine for co-operative advertising.

The League Advertising Committee believes that a thoroughly successful advertising campaign can be carried out by the beekeepers of America through the American Honey Producers' League. The League, because of its standing organization, can in such a campaign collect the necessary advertising material and distribute it to beekeepers in all sections of the country. This material to consist of labels, posters, stickers, newspaper stories, stationery, and possibly other individual items. In this way each individual beekeeper can stimulate his own sales at a comparatively low cost, and the results of the combined effort on the part of a large group of beekeepers will be equal to a very high-priced campaign as laid out by one of the advertising concerns.

Each individual who talks honey or sells honey is an advertising medium, and this has been practically the only kind of advertising used in the selling of honey. Many of our larger beekeepers are of the opinion that the small beekeeper is a detriment to the business. This is not at all true, except for so-called "price-cutting peddlers." But there are many individuals who do not peddle who are just as bad in the matter of price-cutting. If it were not for the hundreds of thousands of individual beekeepers in the United States who are peddling honey one way or another and in this way keeping honey before the public, the larger beekeepers would find it much more difficult to dispose of the product because of an actual lack of demand on the part of the public.

Add to the personal appeal of each individual beekeeper such materials as lithographed pails, standard containers, standard labels, posters, stickers, stationery, advertising blotters and other lesser items, and the

value of each individual would immediately be increased many times as an advertising agency.

With a view to developing co-operative advertising nationally, the American Honey Producers' League arranged for a National Honey Week, which was held during the week of November 16 to 22, 1924. This National Honey Week may not have been beneficial in moving large quantities of honey, but we know that it has done a great deal in bringing honey to the attention of the public, especially in certain sections where groups of beekeepers did some advertising through newspaper stories and displays in stores. Furthermore, the 1924 Honey Week served as a stimulant to those beekeepers in the 25 states participating.

At least 10 radio talks were given in six states. Perhaps there were others, but, so far, we have had reports only from Nebraska, New York, Washington, Michigan, California and Wisconsin. These radio talks were especially important. Through them, honey was brought to the attention of thousands of people who would not ordinarily come in contact with honey advertisements. Another thing this program has brought out is the fact that practically every person is interested in bees and their wonderful life story.

One of the very best means which we can use in bringing honey before the public is through popular, well-written stories in newspapers and magazines telling about the life of the bee. Hundreds of newspaper stories of one kind or another were used in the 25 co-operating states. Dozens of clippings of bee and honey stories have come into this office from New York, Louisiana, Washington, Wisconsin and California. From these we know that Wisconsin and Washington were flooded with beekeeping stories during Honey Week, and that they were well received by the small town newspapers.

Through the efforts of Mr. B. A. Slocum, Specialist in Bee Culture at the State College of Washington, over one-half of the weekly news bulletin of that institution for November 10 was devoted to honey articles for state newspapers. In New York State, Mr. R. B. Willson gave three radio talks in addition to sending out considerable material to the newspapers. Mr. R. H. Kelty, of Michigan, reported that the members of the State Association used 2,000 handbills and that newspaper copy was furnished to 90 dailies and 385 weekly papers by the Publishing Department of the Michigan Agricultural College.

Mr. M. H. Hunt & Son, co-operating with the Michigan Agricultural College, placed an exhibit in one of

EAT
HONEY
NATURE'S
HEALTH SWEET

Honey Week

November 16-22

PURE
DELICIOUS
ENERGY
FOOD

the city's leading grocery stores in which half a ton of comb honey and equally as much in glass and tin was used. Honey Week handbills, printed posters and live bees combined to make a very effective display. Mr. Kelty writes that, during the entire week, there was not a time when there were not from half a dozen to twenty people looking at the display.

In New Orleans, Louisiana, the local papers carried more news items during Honey Week than they ordinarily would carry in an entire year.

In Wisconsin, the Cloverland Apiaries Company, of Wausau, conducted a prize spelling contest which was very successful. Mr. I. C. Painter in charge of the contest, reported that one contestant turned in 1020 words made up from the two words, "Cloverland Honey." Because of the advertising value to be secured from a contest of this kind, we are including the list of prizes and rules for the contest:

- First—20 lbs. Cloverland Honey.
- Second—15 lbs. Cloverland Honey.
- Third—10 lbs. Cloverland Honey.
- Fourth—5 lbs. Cloverland Honey.
- Fifth—5 lbs. Cloverland Honey.
- Sixth—3 lbs. Cloverland Honey.
- Seventh—3 lbs. Cloverland Honey.
- Eighth—2 lbs. Cloverland Honey.
- Ninth—2 lbs. Cloverland Honey.
- Tenth—1 lb. Cloverland Honey.

Rules

1. Out of the letters composing the words "Cloverland Honey" make the longest possible list of good, correctly spelled English words.

2. No word may contain a single letter oftener than it is found in the two words "Cloverland Honey."

3. Only one contestant in a single family. Get the whole family to help.

4. Write legibly on one side of the paper, numbering words.

5. Give name, address and school.

6. Mail by December 5 to Cloverland Apiaries Co., Wausau, Wis.

Mr. H. G. Seyforth, County Agent for Pierce County, Wisconsin, with the help of the local beekeepers, circularized 105 schools with relation to Honey Week.

Mr. P. N. Korb, of Fairwater, Wis., had printed and distributed handbills advertising his own honey. The Wisconsin State Beekeepers' Association issued handbills at the top of which the word "Energy" was used and at the bottom of the page the statement: "Members of Wisconsin State Beekeepers' Association." This handbill contained a few pertinent honey facts and two honey re-

cipes, one for making honey cream waffles and the second for making honey corn flake muffins; 17,500 of these handbills were distributed by the State Association and its members.

The American Honey Producers' League printed a special edition of the League Bulletin in which were given plans for organizing and carrying on campaigns for National Honey Week; 3,577 of these were sent to beekeepers in 25 states to be distributed among local associations and individuals interested in a National Honey Week.

Even cross-word puzzles were used to advertise honey. Mr. Herbert Reim, of Hustisford, Wis., had a cross-word puzzle published in his local paper for which prizes were offered, and Mr. Reim reports a great interest shown in this contest.

In California, the beekeepers of north-central California and also in southern California had two advertising posters printed which were widely distributed, and the writer noticed many of these conspicuously displayed in and around Los Angeles. One thing in particular was noticed in Los Angeles, and that was the great number of roadside fruit and vegetable stands that carried a display of honey in glass and tin containers. In each stand the honey was given a conspicuous place.

No doubt much more information could be given concerning the value of advertising carried on during Honey Week had we received a full report from all the individuals who participated in the Honey Week Campaign, but a number of individuals have so far failed to send in a report and all the material is therefore not available.

A National Honey Week should be an annual event in every state. Most of those reporting indicate that the week before Thanksgiving is probably the best week, although there are a few states in which a different date would seem to be better.

Every State Beekeepers' Association, County Association and individual interested in beekeeping should begin plans now to help with co-operative advertising in 1925. The American Honey Producers' League can be the organizing force and the local associations and individuals the advertising agencies. Furthermore, the American Honey Producers' League in a position to develop a "National Advertising Plan Campaign" under the heading of "Maximum Advertising at a Minimum Cost," which can extend throughout

the year and the results of which will be equal to many thousands of dollars spent through some large advertising concern.

Maximum Advertising at a Minimum Cost.

EAT HONEY THE FLAVOR OF FLOWERS.

Wisconsin.

From An Oldtimer.

I was so impressed in reading your writings on the "Memories of Langstroth" that I thought I would have to write you, as it so brought back to me the memory of those old days that are past and gone.

King lived at Nevada when I met him, and as I was in the hive-making at that time, he contracted with me to make hives for him. He sent me the orders and I filled them, but I saw he was trying to get around the Langstroth patent. And at the convention at Cleveland in 1871, Otis, at the close of the meeting, brought in one of King's hives, seeming bent on a row, but old Moses Quinby, president, ruled it out.

I often think of those days, as I am one among the last of them. I have long watched you, and I give you praise for fair dealings and good ideas, for I love people that do right.

It is now most sixty years since I kept bees first, and I can't last long any more. I have quit making hives. Am making a few four-frame extractors, but intend soon to quit, as I think it about time at almost 82.

Geo. Stinebring.

Ohio.

Size of Apiaries in New Zealand

The New Zealand Fruit Grower and Apiarist in its issue of December 16, 1924, covers a complete list of the apiaries registered in New Zealand at the time of the last compilation of statistics.

There were 6,289 apiaries, nearly half of which were five colonies or under.

A list of these apiaries are as follows:

	No. of Apiaries
Under 5 hives	3,014
5 and under 10	1,203
10 and under 25	1,016
25 and under 50	1,016
50 and under 100	388
100 hives and over	116
Total	6,289

More Honey at Less Cost

By B. F. Kindig.

THE future of the honey business depends upon the profit that the beekeepers will make. There are various factors that determine whether a profit is made. Among them is the market price of honey, the degree of efficiency of labor in production, the cost of marketing, and the yield of honey per colony. There are many other minor factors, but I consider these as the ones of greatest importance.

I feel that with the present economic situation that the price of honey during the next several years will be satisfactory. Whether it is satisfactory or not will not depend so much upon the price at which it sells as upon the cost of production. You and I as beekeepers may not have very much to say about what the market price is in a wholesale way, but we do have a great deal to do with what the cost of production is in our yards. It may be that it is impractical to apply cost accounting to the production of honey. Cost accounting, however, is getting more and more popular each year with people who are producers. Farmers are keeping cost figures as never before in the history of agriculture. It is not unbecoming to a beekeeper to know from year to year the cost of producing a pound of honey under his conditions.

One of the great difficulties in the standardizing of costs of production is that the honey flow varies from year to year and wintering conditions are more severe or more favorable from year to year. These factors, of course, affect the size of the crop and are certainly reflected in the cost per pound.

A great deal is said about the higher cost of supplies. I think the beekeepers can well take a lesson from the Ford Motor Company. Today, with every item that enters into the making of an automobile, higher in price than it was ten years ago, automobiles are being sold at the lowest price in their history. Henry Ford explained this some time ago by saying that when they made their first big cut in price following the war, they made the retail price of every car exactly what they figured it cost to put it in the hands of the consumer. They then directed their energies to the problem of reducing costs so that a profit might be shown. They reduced costs to a very remarkable extent. In fact they reduced cost to the point that they were again permitted to reduce the price to the consumer. If beekeepers would make a careful study of the cost of production, I am sure the cost of producing honey in the average commercial yard could be reduced far below what it is at present.

The cost of marketing should be less with a good demand for the product than when the demand is poor.

Efficiency of labor in production will probably not be much different in the next few years than it is at the present.

The yield per colony may be somewhat dependent on the efficiency of labor, but in this discussion, I shall consider that labor is at least of satisfactory efficiency and will not give any time in that particular matter. I do feel, however, that there is ample opportunity for the development of mechanical aids in beeyard work. I do not consider that the present method of purely hand work in the apiary is satisfactory or economical. I cannot imagine a mechanical engineer in charge of a manufacturing plant, permitting for any length of time the use of such crude methods in the handling of hives and supers as are universally employed today. I am not especially inclined towards mechanical work but believe that those beekeepers, and there are many of them, who are experts in devising of mechanical helps, should give their attention to the investigation of mechanical aids for handling the supers in the beeyard. It is not in harmony with industrial progress in other lines that a beekeeper should be required to do the drudgery that present conditions compel him to do. We may sometimes look with pity on the man who stands in a coal car out in the burning sun in summer time unloading coal all day long. Yet beekeepers are constantly doing, during the period of honey flow, harder work than the man is doing in unloading coal. I am sure there are thousands of beekeepers who have at some time in their experience felt relieved when the honey flow was finally over. They felt so because they were completely exhausted by heavy work of tearing down stacks of supers and piling them up again. I believe that some organization would do well to offer a prize of a considerable amount of money for the invention of the best device for handling supers mechanically. We are inclined to believe that because we have always handled our work in the beeyard without mechanical aid, that we will continue to do so. We are out of tune with the times when we are doing with human labor that which can be done with machinery. This is a subject which has received a scant amount of attention either in the bee journals or in conventions, but in my opinion it is one of the most important subjects that beekeepers can discuss. It seems to me entirely possible that a device can be made which will enable one man to do the work of two during the honey flow. If this is possible, there is an opportunity here for the making of a big saving in the cost of production. Suppose such equipment cost even \$500, which I consider is far above what the cost would probably be. On the basis of \$500, with an interest charge of 7 per cent and a depreciation charge of 10 per cent,

the cost per year would be \$85.00. Thousands of beekeepers could well afford to pay \$85.00 or two or three times that amount if they could reduce their labor cost during the honey flow by 50 per cent. But, the thing that appeals to me more strongly than the saving in money is the saving of human energy. Referring again to the feeling that many of us have had that we were glad when the honey flow ended, this is a condition that is not right. When we are physically exhausted, we are not capable of the best mental effort. If through mechanical helps we can save our strength we can give, then, more intelligent attention to the efficient handling of our colonies and at the same time increase our production.

I wish to discuss greater production, but I wish to discuss it from another angle, namely, that of the type of hives. I suppose the time will never come when beekeepers will cease to invent new beehives or try out those of another kind. We have, however arrived at the place where the 10-frame Langstroth hive is the standard. I presume that more than 90 per cent of the hives in use in commercial apiaries are of this type. We have taken it for granted that this is the proper hive to use in production of both comb and extracted honey. Most of us find it convenient to produce comb honey from the one-story hive and extracted honey from the two-story hive. I doubt if five per cent of the commercial beekeepers have ever tried another kind of hive in a comparative test to determine whether the Langstroth hive is the best for their purpose or not. I have put this question to a large number of beekeepers in a great many meetings and it is very rare indeed that any beekeeper says that he has found by his own experience that the present standard hive is the best adapted to the production of extracted honey. I shall confine my remarks to a discussion of another type of hive in reference to the production of extracted honey only.

Extracted honey comprises from 80 per cent to 100 per cent of the honey production in various parts of the United States. Whether or not we are using the best hive for our purpose is, therefore, a matter of very great importance.

I have questioned beekeepers all over the State of Michigan as to their experience. After satisfying myself that there is not enough experience in this connection in Michigan, I went out into other states to see what beekeepers have found out. The question which I put to them was this: "Have you ever used any other hive than the one or two-story 8 or 10-frame Langstroth hive? If so, did you note the relative amount of honey produced by such other hive, and did you note any difference in

the ease of management or in economy of production?"

You will note particularly that I have not mentioned any other hive by name than the standard Langstroth.

I should say in explanation of this little investigation, I had found enough beekeepers in Michigan using a hive of larger dimensions and getting correspondingly greater results that I was compelled against my own inclination to believe that these experiences were not all due to the much abused term "locality." For example, I found one beekeeper with about 600 colonies. Five hundred and fifty of these colonies were run for extracted honey in one and two-story, 10-frame Langstroth hives. The other fifty colonies were partly in hives of 11 frames $17\frac{1}{8}$ inches long by $11\frac{1}{4}$ inches deep and the balance of them were on the regular size Quinby frames which are still larger. The former are commonly known as the Jumbo or Modified Dadant frames. The colonies in these hives were run in one story for comb honey. The crop of this season was as follows: For the 550 colonies in one and two-story Langstroth hives run for extracted honey, they averaged about 15 pounds per colony. The fifty in the large hives run for comb honey averaged over 50 pounds per colony and required less feeding to prepare them for winter. You may be sure that it was not easy for me to accept these figures without considerable question. This beekeeper had bees in such hives for several years and he assured me that excepting the first season that packages were put in these large hives. These colonies have always yielded larger crops than those in the standard hives. I then questioned him as to his experience with the Jumbo or Modified Dadant as compared with the Quinby, and he assured me that for both comb and extracted honey the yields of the Quinby hive have always been slightly higher than for the Jumbo or Modified Dadant. The past season was a peculiar one in his vicinity in that the honey flow was very short and began at about the normal time. What is ordinarily the last half of the honey flow was not realized at all because of cold and cloudy weather. He gave the following as his reason for the larger hives getting the larger crops. The larger hives carry into winter larger colonies of bees and in the spring time the number of bees in such hives is much greater than in the standard Langstroth. They build up faster as a result of this and in his experience have always been ready for the honey flow from ten days to two weeks before the bees in the Langstroth hives. This is a matter of very great importance to the beekeepers in the North, as the length of time for the rearing of young bees is relatively short and anything that we can do to make 100 per cent of our colonies of proper strength at the beginning of the honey flow is very much worth while doing.

I have recently learned that this beekeeper will soon offer for sale all

of his Langstroth equipment so that he can within the next few years get all of his bees on larger frames.

I quote the following from an acknowledged authority but do not have permission to use his name. He said: "I believe the Jumbo or Modified Dadant hive is more adapted to commercial production than for the farmer and back-lotter. I believe that for the farmer who does not use an extra hive body and who simply puts supers on once a year and takes them off when it is so cold the bees cannot sting him, the Jumbo or Modified Dadant hives are better than any other hive he can use."

From a manufacturer of bee hives I have the following: "There is a very definite trend visible from our manufacturing records towards a larger hive for brood rearing and wintering." From another manufacturer I have the following, as the answer to my question as to the proportion of the larger hives which they sell. He says: "The proportion is quite small, and in the last two years it has been growing smaller, due probably to the increasing popularity of the food chamber plan." I presume that you are all familiar with the experience of the Dadants at Hamilton, Ill. You know of their experiments with the Langstroth and other hives in the production of extracted honey and that after very exhaustive tests which they have carried on over a period of 40 or 50 years, they still find that the hive with the large frame produces the biggest crop.

I have the following from an Indiana beekeeper: "I like the Jumbo hive because it is large enough for a broodnest for a good queen, and all in one piece. When run for extracted honey, you can take away all the honey in the supers and yet there will be plenty left in the broodnest for wintering. It is much less in cost than two hive bodies. I believe the queen will lay better in solid combs than she would if she has to jump from one story to another. Some use two hive bodies instead of a Jumbo or Dadant, saying they cost less as they use one body to extract from. I don't like the idea of extracting from the broodnest, as the quality of the honey is not as good."

A beekeeper in Illinois writes of his experience as follows: "Referring to the Jumbo or Modified Dadant hive, I get more honey, less swarming and better outdoor wintering. The Langstroth hives require more skillful manipulation. The hive with the large frames requires more winter food, but in return they are larger colonies and produce more honey the next season."

A beekeeper in Iowa writes this: "I have never kept track of the comparative yields of the different hives, but I like those with the larger frames much better as far as the control of swarms and manipulation are concerned. From the standpoint of economy I also feel they are the best. There are several beekeepers in this vicinity that are using Jumbo or Modified Dadant hives and they are all enthusiastic about them. I have

very few swarms, but what I get are usually from the 10-frame Langstroth."

Another Iowa beekeeper writes: "After several seasons' experience with the hive (referring to the Jumbo or Modified Dadant), I find that it has produced all of 100 per cent more honey, with 50 per cent less work than any other hive we have used. I have never lost a colony in the Jumbo or Modified Dadant and they are so strong that every season appears to be a good honey season. I have always had a heavy yield since using the Jumbo or Modified Dadant. In 1924 my average yield was 429 1-3 pounds per colony. I never have come within a gunshot of such an average with any other hive. I never had but one swarm from the large hives. It looked as though all the bees in the yard were in the air. I shook them back into their hive the next day and they put in 480 pounds of honey this year."

Regarding the experience with such equipment, one man puts it as follows: "While the cost of these hives may seem high at first, it is really less than for the standard 10-frame, as only one hive is necessary for the brood nest, while two are required for the standard 10-frame hive."

This summer I called upon a Michigan beekeeper who produced 16,000 pounds of cut comb honey in 1923 and expected to produce more than 20,000 pounds in 1924. He told me that at one time all of his bees were on Hoffman frames. He began experimenting with the larger hive and after a trial, he decided to put all of his bees on the larger frames. Last season he had only a few colonies left in Langstroth hives and told me that the yield from those hives was far below the yield he secured from those with the larger frames.

A Missouri beekeeper writes as follows: "I have bees in 8-frame, 10-frame and Dadant hives, and consider the latter far the better." The Dadant hives yield from 50 to 100 pounds of honey more per colony than the others. I consider them more economical to run and it is not necessary to go through them so often."

There are some points that should be mentioned that have not been covered in the foregoing quotations. One is that in order to change to a 10 or 11 frame Jumbo or Modified Dadant hive, it is not necessary to throw away present equipment. The hives are so constructed that our present standard equipment can all be used as supers. A beginner, however, who does not have equipment on hand should have super equipment of the same size as the hive body.

I believe it is generally agreed that bees produce honey more efficiently close to the brood nest. With the use of a wider hive, less tiering up is required and all of the honey can be produced nearer the brood nest than in any combination of supers of 8 or 10-frame size. We sometimes see photographs of supers piled so high that it is necessary to tip them up to prevent them from tip-

ping over. This always appears ridiculous to me and is one of the best arguments that I have ever seen for the use of a wider hive. Colonies in 8 or 10-frame hives that produce such crops as I have seen pictured would doubtless produce even greater crops if the hives were wider and the supers correspondingly lower. Everyone knows that the higher the supers are piled up, the harder it is to handle them. More time is required to tear down 6 or 8 supers than to tear down 5 or 6 supers. More energy is expended and the cost of production is thereby increased. A heavy super can be handled easier near the ground than a lighter one as high as one's head.

One of the points that appealed to many in connection with the wider hive was the fact that the honey could be produced within reach of the average person.

You will note that I have not advised or recommended that you discontinue the use of the present standard equipment. The appeal that I wish to make is this: Find out for yourself whether or not under your conditions of production, the larger hive will or will not produce more honey at less cost. So far as I am concerned, I have no sentiment relative to the Jumbo, Dadant or Quinby hives. A hive is only a means to an end and the only thing I am interested in is in knowing whether what we have adopted as a standard hive is the best hive for our purpose. The Langstroth hive has become a standard hive during the area of comb honey production. The industry has changed so that the production of extracted honey is paramount. I wish to raise the question whether the change from the production of comb honey to the production of extracted honey does not indicate a change in the style of hives. Advocates of the two-story hive say that the change has been made and the requirements have been set. However, authorities in beekeeping, such as our Indiana correspondent, a portion of whose letter I gave, say that the queen will lay better in solid combs than if she has to jump from one story to another. Our success in honey production depends to a large extent on how well the queen lays from the beginning of brood rearing until shortly before the opening of our main honey flow. If she will produce more bees in the hive with the large frames than she will in the hive with the smaller frames and more of them, then, it is plainly our business as honey producers to put the queen on such frames as will get us the most bees for the harvest.

Beekeepers do not do enough investigational work on their own account. Some time ago, I visited the Buick Motor Car Company and I found that as soon as any competitor brings out a new model of automobile, the Buick people purchase one of them and take it into their experimental department and tear it completely to pieces in order that they may find any improvements, no matter how slight, in the construction of the competing car. I want to

ask how many of you people know, of your own knowledge, by your own tests, that the hive which you are using is the best one for your purpose? Your answer to this will indicate whether or not you ought to try out some of the other hives with the larger frames. Michigan.

Utah Beekeepers Meet

By L. D. Roueche.

Beekeepers representing some 25,000 colonies of bees met recently in Salt Lake City and attended the annual convention of the Utah State Beekeepers' Association.

J. C. Henager, of Salt Lake, was re-elected President of the Association; D. H. Hillman, State Apiarist, was re-elected Vice President, and F. H. Terriberry was re-elected Secretary.

One of the most interesting as well as most important discussions of the convention centered around the advertising of honey. It was proposed that lectures be given by beekeepers in the High Schools throughout the state pointing out the exceptional food value of honey and also creating interest in the keeping of bees. An article by Dr. Alfred McCann on "The Question of Honey," which appeared in the January issue of the "Correct Eating Magazine," was read to the convention. The article carries a great deal of valuable information about the consumption of honey and its value as food. It was recommended that each beekeeper secure a copy of the article and study it with a view to preparing himself to give a lecture on honey.

Considerable discussion centered around the question of the rights of migratory beekeepers. Instances were cited where migratory beekeepers had located so close to long established beekeepers that neither the migratory keeper nor the beekeeper with the prior right to the territory had received a crop of honey.

As a result of this discussion, R. T. Rhees, of Ogden; J. R. Smith, of Salt Lake, and Otto S. Grow, of Salt Lake, were named as a legislative committee to draft a legislative proposal regulating the placing or locating of migratory beekeepers in order that prior rights may be preserved.

On a proposal of N. E. Miller, of Provo, Utah, one of the largest beekeepers in the world, a committee was appointed to get in touch with the beekeepers' associations of the four or five adjoining states and figure out the best way of marketing honey. The following were named on this committee: D. H. Hillman, A. W. Anderson and N. E. Miller.

Progress in the state's honey production industry was made during the past year, according to the report of Mr. Hillman, State Apiarist, although drought and an unfavorable season lessened the yield. There are 1,500 beekeepers in the state, operating 47,193 colonies. Honey produced during 1924 totaled 2,929,996 pounds, or 62 pounds per colony. There are 28 county bee inspectors who cover 18 counties. These inspec-

tors are also beekeepers, as it has been found that beekeepers are the best inspectors. There was less disease among bees than in former years, and while there were fewer colonies, it was pointed out that most of those who had withdrawn from the industry were "Bonanza" beekeepers who started in during war times and the high price of honey.

Continuation of the present methods of inspection by inspectors appointed by commissioners of the various counties for the purpose of the eradication of foulbrood and other diseases in preference to federal aid was favored by the convention, and a committee made up of W. A. Stewart, of Myton; A. G. Anderson, of Leeds, and F. B. Terriberry, of Salt Lake, was named to attend the State Legislature and give attention to laws affecting beekeepers.

The work of Mr. Hillman as Utah State Apiarist was commended and the recommendation made that his services be retained for the next four years. Association membership was reported as growing and its services will be expanded during the present year. Utah.

Noted Woman Writer a Commercial Beekeeper

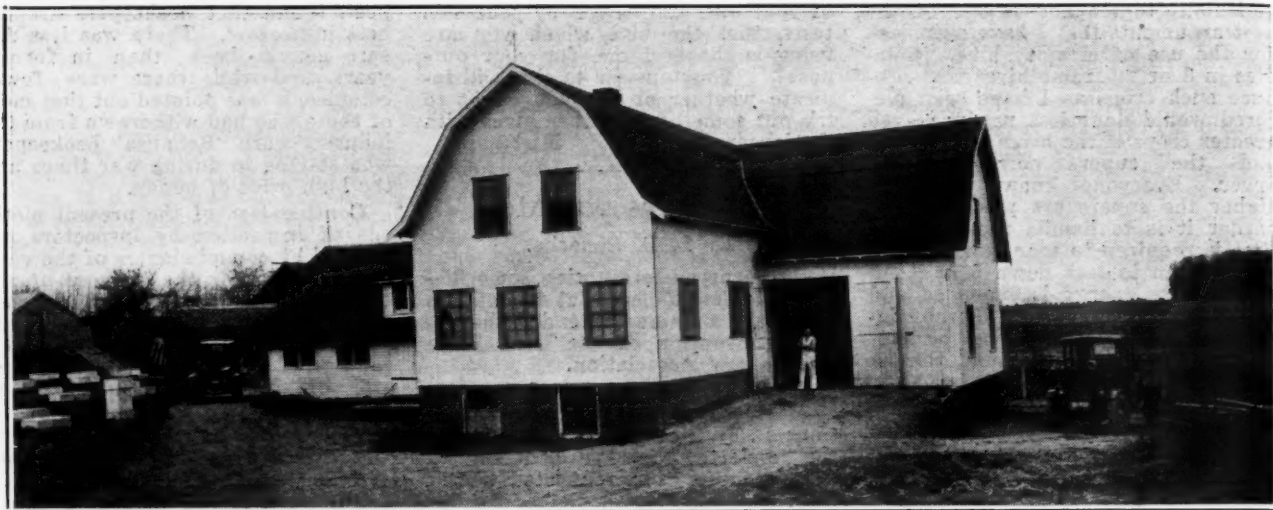
By F. L. Clark.

Readers of the American Bee Journal who have read and enjoyed the popular novel, "Country People," by Ruth Suckow, will be interested to know that Miss Suckow is a commercial beekeeper. She has a yard at Earlville, Iowa, and takes almost exclusive care of around seventy colonies of bees. She even markets her honey in person, selling it to the stores in fancy packages bearing the name "Suckow Honey."

Miss Suckow, while traveling the thorny path which leads to literary success, has made a living with her bees. Beekeeping, she says, is the best job she knows of for an aspiring writer who must earn his daily bread and butter while waiting for the editor's doors to swing open to him. It only requires a part of the day most of the spring, summer and fall, and in winter one is almost entirely free.

Now that "Country People" and short stories in magazines have given Miss Suckow place among the foremost writers of the middle west, she still continues to divide her time between her beeyard and her typewriter, and plots for stories come, as alone out in her beeyard she works about the hives.

Miss Suckow is an ardent advocate of the beekeeping business as a job for women. "I don't understand why there are not more women beekeepers," she said recently. "They can do most of the work as well as the men." She particularly thinks farm daughters should take up bees as a special little side line. It would add great interest, she believes, to life on the farm and they would be earning money, just as mother does with her poultry and brother does in his calf and pig club work. Iowa.



Sound Methods Make Beekeeping a Real Business

This Is the First of Two Articles Based on a Personal Interview with E. L. Hofmann

By E. W. Atkins.

IF you ever think that beekeeping is going to the "bow-wows" think of what E. L. Hofmann has done up at Janesville, Minn., and your pessimism will be knocked galley west.

His confidence in the future of beekeeping, his foresight in planning and his thorough knowledge of bees have enabled him to build up a real business. If you think I am exaggerating just look at some of the pictures with this story. See the spacious, well laid out central honey house with a gravel road running entirely around it. One branch of this road runs by the side of his home to the public road and the other circles the home apiary. The bees paid the way for these and many other improvements to cut Mr. Hofmann's cost of producing honey. His home and home apiary are located on a public highway about one-half mile from a state trunk road, yet he is virtually on it. Largely at his own expense he has graveled the road leading from the state road to his home. Furthermore, all the out-apiaries are on gravel roads. So rain or shine his lines of communication are always open to go where he pleases with the least possible loss of time and wear and tear on the trucks.

After all is said and done, Mr. Hofmann's efficient equipment and good roads are only contributory to his success. These conveniences and labor-saving devices have been made possible from the profits made from the bees and now are helping him cut the costs of honey production. In this way there is no danger of building up a top-heavy business.

Improving a Location

What are his methods that enable him to make consistent profits? I can imagine that some folks will say,

"Oh, he has a wonderful location." In reply to that I can say that when he started beekeeping he had only an average white clover and basswood location. In 1906 he interested a few farmers in growing alsike clover for seed, and since that time, under



Close-up of one of Hofmann's heavy producers. Remember this is an old-style Dadant hive and you don't have to go up so high to get capacity as with standard equipment.

his leadership Janesville has grown to be one of the leading centers for alsike clover seed in the United States. The growing of alsike, sweet clover and other valuable honey plants can be boosted in many parts of the country. Many beekeepers have found that to be true. The improvement of a locality really goes hand in hand with large scale honey pro-

duction management. I am sure that every locality can be improved from the standpoint of honey production, and it is certainly unnecessary to crowd and ruin one's own chance of getting a good crop as well as the other fellow's. Oftentimes it's the method of beekeeping rather than the locality that gives the results. It is often only a misleading trait in human nature to surmise that the grass on the other side of the fence is greener.

"In beekeeping my big aim is to obtain as large a crop of honey as possible with the least possible expense," said Mr. Hofmann. That statement naturally aroused my curiosity, for a big crop to one person may be a small crop to another. Anyone who knows Mr. Hofmann personally will tell you that he is inclined to be very modest in his statements, and it was some time before I had sufficient evidence to estimate the size of his crops. However, by putting two and two together, as the old saying goes, I found that while 1924 was one of his poorest years for average colony yield, he produced over 90,000 pounds from 600 colonies and made 100 colonies increase. In 1923 his crop was not less than 150,000 pounds from about the same number of colonies as he had in 1924.

Knowledge Applied to Business

It seems to me that Mr. Hofmann's success is due not only to a thorough knowledge of bee behavior but also to his ability to put this knowledge into practice in a thorough, systematic way.

In outlining his system I believe the only way that I can begin to do it justice is to start with his late summer management. In the first place, each hive automatically receives additional protection before the cool nights arrive. I say this advisedly



Hofmann outyard during the 1923 clover flow. Old style Dadant hives with telescope covers are the regular equipment.

because every hive is equipped with a deep telescopic cover, and when the honey crop is taken off this cover naturally goes down over the brood chamber. It extends down to the bottom board. A close-up view of these covers is shown in the picture.

There is no guess work in his system. He sees to it that every colony has an abundance of good, pure stores for winter. No chances are taken on the quality and quantity. Every colony is weighed quickly and accurately by the method shown in the picture. The safety factor is 100 pounds, gross weight, for each of his Dadant hives, without the telescopic cover. The quantity of food required to make up the required weight is plainly marked on each hive at the time of weighing. With all hives quickly weighed he is all ready to feed. A 5,000 pound tank constructed to fit in a motor truck is used to mix and transport the food. The truck with tank in place is run into the garage. The required quantity of water is forced into the tank. Sugar is poured into the tank through a trap door in the room above the garage. A steam attachment is put in the tank and steam run into the water through a long pipe which has small holes along it. The steam agitates the water and the solution is made in a very short

time. (Caution: In doing this work care must be taken to control the



It's a feeder in the foreground with Miss Hofmann holding one float. Next the boss is demonstrating his method of weighing each colony. In the background, two old-style Dadant hive bodies, filled with honey are raised with ease with the lifting device.

steam pressure and have it properly distributed in the water or one can

be badly scalded). When ready to feed, the truck load of sirup is driven right into an apiary.

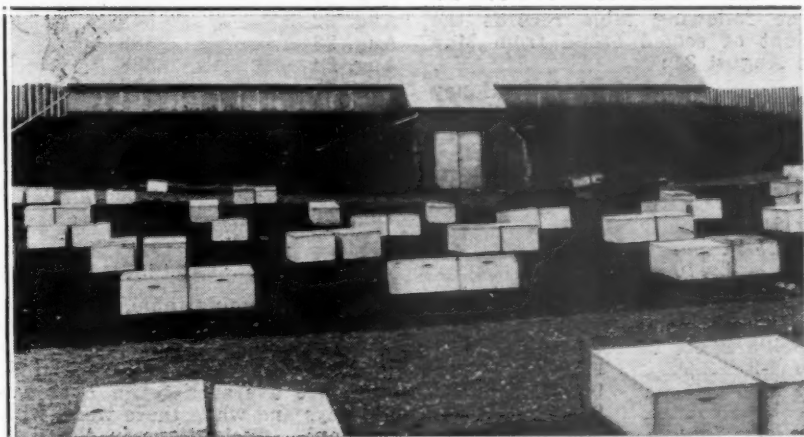
No Guesswork Applied

The feeders used are the modified Miller type. They are made from a shallow super and require an additional super to cover them. The joints are thoroughly waxed and Mr. Hofmann reports he has no trouble with leakage. We show a view of one of these feeders with Mr. Hofmann's daughter holding one of the floats which are used in each compartment of the feeder to prevent the bees from drowning.

On the inside of the tail board of the truck is a board which, when the tail board is lowered, forms a shelf on which pails to carry the food to the feeders are placed. These pails are graduated on the inside so that any desired quantity of sirup can be run into them. The tank containing

the sirup has a long hose connection with a faucet at the end for convenience in filling the pails. With this system Mr. Hofmann said three men can drive 10 miles and feed over 200 colonies and return to the plant in 2½ hours. This means that to feed 600 to 1,000 colonies of bees is not a big job and it is certainly the biggest insurance a man can have that cellar wintered bees will come through safely if other conditions are right.

All the bees are wintered in cellar. Mr. Hofmann's latest cellar is built adjoining the home apiary and a branch of his gravel road system runs right up to the big, well insulated outer doors. A general outside view of the cellar is shown. This cellar is constructed of cement tile with double air spaces. Above the ceiling, which is below the earth embankment, is over four feet of tightly packed clover chaff. At the end of the vestibule



View of the Hofmann home cellar. It's built to maintain an even temperature. Note the gravel road that runs through the apiary and by the cellar. Trucks never get stuck by that system.

leading into the cellar is another set of well insulated double doors. A cellar that will keep out the warm air will keep out the cold. At the time of my visit, which was the first week in November, 1924, the weather was mild, but the bees were in the cellar resting very quietly with the temperature in the cellar at 52 degrees F. We walked from one end of the cellar to the other without causing

any bees to leave the hives. Isn't this the best proof that they were wintering under very favorable conditions? Even with the protection of the deep telescopic covers Mr. Hofmann believes in putting bees in the cellar early to conserve their energy for spring broodrearing and he builds his cellars accordingly. There are three other cellars equally well insulated at outyards.

Relation of Broodrearing to Honey Production

Kansas State Agricultural College and Experiment Station

By J. H. Merrill, Apiarist.

(Contribution No. 344, from the Entomological Laboratory, Kansas State Agricultural College. This paper embodies some of the results obtained in the prosecution of Project No. 126 of the Agricultural Experiment Station.)

CONSIDERABLE criticism has been directed toward the statement, "Ordinarily the amount of brood which is reared in a colony is less than 2,000 daily." When the criticism was adverse, it usually took the form of, "We don't believe it anyhow." Friendly criticism usually ran somewhat as follows: "The results secured are interesting." "We do not doubt the accuracy of these observations for the conditions under which they are made." "We would like to see them tried out with colonies that store large crops of honey." "If these conditions are true, then large hives are not necessary." "Further work is needed along these lines," etc.

If "pigs is pigs," then it is safe to assume that facts must be facts. It is hoped that a presentation of the facts of the case may help to answer some of the above criticisms. Another criticism has been made that the frequent disturbing of a colony of bees for the purpose of measuring its brood causes a setback in its broodrearing. The following will serve as a refutation of this statement.

On May 9, 1924, a strong colony of bees was purchased and removed to the college apiary. On May 11, when the amount of brood in this colony was measured, it was found that the average daily amount of sealed brood for the 12 days which preceded May 11, was 1200. For the next three days it was 1205. For the next eight days the daily average was 1210, which would indicate that the disturbance did not bother them much.

This was an unusually strong colony. One would have been justified, upon observing it, to conclude that if ever such a thing existed as a 100,000 colony, then this surely must be one. This conviction would have been still further borne out when this 2½-story, 10-frame Langstroth colony was opened and it was found that there was brood in 16 of the frames. Here was an excellent opportunity to arrive at a mistaken conclusion as to the total amount of brood. However, it was

carefully counted and the average amount for 21 days previous to May 11 was found to be 1351. Of this amount, 1200 was found to be the daily average of sealed brood. It is the sealed brood which emerges, and when considering the subject of broodrearing, we ought only to take into account that form of brood which eventually becomes adult bees. There is no correlation between the number of eggs deposited, the number of unsealed larvæ in a hive, and the amount of sealed brood in a colony. The amount of brood which is reared to the adult stage depends more upon the broodrearing power of a colony than it does upon the number of eggs deposited by the queen. In this colony, the highest daily average of sealed brood throughout the season was 1210, spread over 16 frames. It must be admitted that this amount of brood could have been condensed into a much smaller number of frames. Had it been so condensed when it was in the larval stages, then the total amount of sealed brood would probably not have been so high. This is an argument in favor of the larger hives rather than against them. When we consider that the amount of brood reared depends upon broodrearing power of the bees themselves, it will then be seen that everything which favors this broodrearing power, such as plenty of room, plenty of stores, etc., will increase the amount of brood reared.

The following table records the amount of sealed brood from May 2 to August 31:

Date.	Sealed Brood.	Honey Stored.
May 2	-----	-----
May 3-11	1200	-----
May 12-14	1205	-----
May 15-22	1210	-----
May 23	1039	-----
May 24-31	867	-----
Total, 32070.		
June 1	867	-----
June 2-3	918	-----
June 4-9	969	-----
June 10	969	1
June 11	969	¾
June 12	969	¾
June 13	969	3½
June 14	981	-----
June 15	981	¾

June 16	-----	981	1¾
June 17	-----	981	2
June 19	-----	981	-----
June 20	-----	981	2¾
June 21	-----	981	1½
June 22	-----	924	1½
June 23	-----	924	1½
June 24	-----	924	-----
June 25	-----	866	-----
June 26	-----	866	¾
June 27	-----	866	2¾
June 28	-----	866	1¾
June 29	-----	866	¾
June 30	-----	866	2¾
Total,	28209.		

July 1	-----	718	2¾
July 2	-----	718	2¾
July 3	-----	718	-----
July 4	-----	571	3½
July 5	-----	571	5¼
July 6	-----	571	2¾
July 7	-----	571	3¾
July 8	-----	571	7½
July 9	-----	571	6¼
July 10	-----	571	8¾
July 11	-----	571	7
July 12	-----	985	5¾
July 13	-----	985	3½
July 14	-----	985	2
July 15	-----	985	3
July 16-19	-----	985	3
July 20	-----	985	3¾
July 21	-----	985	2
July 22	-----	985	½
July 23	-----	985	-----
July 24-31	-----	777	-----
Total,	24758.		

Aug. 1	-----	777	-----
Aug. 2	-----	880	-----
Aug. 3	-----	880	7½
Aug. 4	-----	880	3
Aug. 5	-----	983	3¼
Aug. 6	-----	983	2
Aug. 7	-----	983	2¼
Aug. 8	-----	983	5½
Aug. 9	-----	983	1½
Aug. 10	-----	983	-----
Aug. 11	-----	846	3
Aug. 12	-----	846	4¾
Aug. 13	-----	846	5¼
Aug. 14	-----	708	3¼
Aug. 15	-----	708	¼
Aug. 16	-----	708	-----
Aug. 17	-----	708	-----
Aug. 18	-----	708	10
Aug. 19	-----	708	3¾
Aug. 20	-----	548	1¼
Aug. 21	-----	548	1
Aug. 22	-----	548	-----
Aug. 23	-----	388	-----
Aug. 24	-----	388	-----
Aug. 25	-----	388	2
Aug. 26	-----	388	¾
Aug. 27	-----	388	¾
Aug. 28	-----	388	1¾
Aug. 29	-----	388	½
Aug. 30	-----	388	½
Aug. 31	-----	388	-----
Total	-----	21237	

In the foregoing table, the amount of sealed brood is recorded beside each date upon which it was found in the hive. These amounts indicated are averages taken over several days and while there were, without doubt, fluctuations in the daily amount of brood reared, yet it serves to indicate the amount of brood reared. It should be recognized that

the brood represented here is all sealed brood and, consequently, was developed from eggs which had been deposited in the combs from nine to twenty-one days previously. It will be seen that the greatest amount of brood was reared before the honey flow actually began, after which followed a decrease, and this in turn was followed by another peak of broodrearing. The second peak, as represented in the table, coincides with the second honey flow, but the eggs from which this brood was reared were deposited during the last of July, when no nectar was coming into the hive.

The honeyflow did not begin until the tenth day of June, after which it continued in a desultory sort of way until July 1. During the first two weeks in July, considerable honey was stored, but after this time nothing more was brought in until the third day of August, after which date the flow continued for about three weeks.

In order to provide sufficient room for this colony, it was necessary to maintain it in four and one-half 10-frame Langstroth hives, despite the fact that 1210 was the highest daily average of its sealed brood. It stored, between June 10 and Aug. 31, 159½ pounds of honey, which certainly entitled it to be considered as a high producing colony. The fact that it stored, during the honey

flow, as much as six, seven and eight pounds daily, indicates what a colony can do even though its highest daily broodrearing is not even 2,000, but as low as 1200. That the bees were there and ready to work is indicated by the fact that as soon as the honey flow was resumed in August, they again began storing creditable amounts of honey. There were 14 days in June and 13 days in July during which no honey was stored. This makes a total of 27 days during the two months which bees in more favorable locations ordinarily bring in large amounts of nectar. What might this colony have done had it been placed in a sweet clover section of North Dakota?

This colony was strong when purchased, yet between May 12 and June 10, the date upon which the first honey was stored, 40,587 bees emerged in this colony, which is no inconsiderable amount. The total amount of sealed brood which undoubtedly developed into adult bees from May 2 until Aug. 31, was 106,274.

As previously stated, it is the purpose of this paper merely to set forth a few facts about broodrearing and honey storing. Hence, no attempt will be made here to draw inferences from the figures presented, yet it must be admitted that they do seem to particularly answer the criticisms which were quoted at the beginning.

American Foulbrood Eradication

By Elmer G. Carr.

APPARENTLY it is difficult for many beekeepers to see things from a viewpoint other than their own, or, in other words, to appreciate the differences in locality. I realize that this word "locality" has been made the excuse for many things for which it was not responsible, nevertheless it is a perfectly good word in this connection. This difficulty to appreciate the difference in locality is experienced apparently by bee disease control officers also.

The American foulbrood situation in the United States is serious if one may judge by the number of combs reported treated with Hutzelman's Solution and the places where this solution has been used. In view of this it is not surprising that Federal aid for the control of this plague is being considered.

One of the most unfortunate trends of thought to this country is, if anything needs correcting, make a law and, presto! the thing is done. Whereas the truth is, if the citizenry supports any legal measure, it is effective, otherwise not. In this connection it might not be out of place to mention the very evident restlessness of the general public, because of the continued increase of inspections and legal regulations.

Unfortunately, some beekeepers seem to forget that American foul-

brood control, like charity, begins at home.

We wonder if combs by the thousands should become contaminated in an apiary where an honest effort is made to control American foulbrood.

A beekeeper moved from New Jersey to California and reported to the writer that so far as he could see in the locality under observation, no measures were taken to clean American foulbrood out of a colony until that colony ceased to become a producer of surplus honey. As a result the colony was allowed to produce honey for transportation to any part of the country, any drop of which might contain spores of American foulbrood. Under the transportation facilities existing in this country, this honey might find its way to any apiary of the country and cause an outbreak of disease.

I do not wish unjustly to criticize any effort to eradicate American foulbrood or to discourage any effort in this direction, but I do wish to call attention to the avenue of spread left open so long as honey from infected colonies is allowed free movement. The damage from this source is little realized by those in states where practically no honey is imported from other states, but is a very real danger in such states as are so importing tons of honey annually.

The extent to which some honey producers have confidence in the freedom of their product from American foulbrood spores is shown by the experience of one beekeeper this year. This person wished to supplement his supply of light colored honey, for blending to care for his trade, and wrote many advertisers asking for samples and prices. The letters were worded so that the recipient might infer that the honey would be used for feeding.

Some of the replies indicated that feeding honey was not good practice—that sugar was better for the purpose and that it was dangerous from a disease standpoint. Most striking of all was the fact that no one was willing to recommend his honey as being safe for bee feeding. Some were frank enough to admit that they had American foulbrood in their apiary.

This beekeeper realizes the damage already done bees in this state by contaminated honey and wishes to do all possible to check the spread of disease from this source.

In New Jersey the results of American foulbrood eradication efforts in the individual apiary are very encouraging, but the disease is constantly appearing in hitherto American foulbrood free territory where no trace of contamination by bees or fixtures can be found. The natural conclusion is the disease is introduced through shipped-in contaminated honey.

Such radical measures as burning colonies, either with or without recompense, in an attempt to stamp out American foulbrood, I consider undesirable and unnecessary except where an exceedingly small per cent of colonies are infected and no other disease is found in the neighborhood.

Without the expenditure of one cent of public money or the employment of a single additional public servant, it is possible greatly to reduce American foulbrood in the United States within two years and to entirely eliminate it within a comparatively short time. But one thing is needed—observe the Golden Rule.

Someone will say, "Very true, but not everyone will do it." To this I will say, try it yourself and see how it works. The one who raises this objection is frequently the one who is unwilling to start the movement.

A honey producer should either employ such measures as are necessary to produce disease-free honey, except in such cases as he may accidentally be caught with surplus on an infected colony where the infection could not be discovered before the honey flow, or quit honey production.

Dr. Phillips once said there need be no disgrace in having American foulbrood appear in one's apiary, but the disgrace comes when all possible measures are not used to eliminate it. This statement is still true and I'd like to add that the strongest condemnation is due the one who does not use all possible means to so eliminate disease.

New Jersey.

Memories of L. L. Langstroth---No. 5

By C. P. DADANT.

I THOUGHT I had closed the relation of my "memories" of Father L. L. Langstroth, but one critic tells me that, in the explanation of the Heddon hive discussion and its praise by Mr. Langstroth, I have shattered his idol, while another writes that he expected more details of Langstroth's experiences. Although I was never at hand to witness any of Mr. Langstroth's apiary work, I can decipher some of his notes, so I have concluded to give another paper on this old master.

First, let me say that, a biographer, if he expects to see his statements accepted, must give the weak points of his hero, as well as the praiseworthy facts. I have not acted as an iconoclast, as intimated by the first critic, but have simply explained the conditions under which the articles published in 1888, in both of the leading bee magazines of America, were written, on the Heddon hive invention. Enough remains of Mr. Langstroth's inventions and experiences to show him as probably the greatest bee writer since the time of Huber and Dzierzon. In fact he displayed some courage in supporting Huber and Dzierzon, as he did, after the criticisms heaped upon Huber by men such as the famous Robert Huish, in 1815, who called Huber's discoveries "gross absurdities." It was evidently in reference to Huish that Langstroth wrote, on page 32 of his first edition, when he spoke of Huber being "abused by the veriest quacks and imposters." And as to Dzierzon, it also took some courage to support him, in the presence of hundreds of critics of his "parthenogenesis," which is yet denied at the present day by some self-styled naturalists. But the discoveries of Huber and Dzierzon could easily be proved, and Langstroth tested them. Similarly, concerning the then popular belief that the waxmoth destroyed healthy colonies of bees; after having stated that "modern writers, almost without exception, have regarded it as the plague of their apiaries," Mr. Langstroth bravely took the other side of the question and wrote:

"To one acquainted with the habits of the moth, the beekeeper who is constantly lamenting its ravages, seems almost as much deluded as a farmer would be who, after diligently searching for his missing cow, and finding her nearly devoured by carrion worms, should denounce these worthy scavengers as the primary cause of her untimely end."

To our knowledge, Mr. Langstroth was the first man to take a positive stand against the popular belief that moths were a great danger to the bees.

Mr. Langstroth's great aim was to give the results of his work in as compact a form as possible. When we peruse the "interleaved" copy of his book upon which he worked, more

or less, from 1859 till he gave up hope of doing the work of revision himself, we find that a great deal of thought was given to shortening the book. On the first page of the introduction, he had written some all but illegible words, stating that the subject of the book might be abridged to 300 pages (the work contained 408) including all new matter. Instead of that, when we took it in hand, we found it necessary to increase it to 575 pages, although our latest edition, of a larger size of page, contains only 438. But why reduce the size of a book, aside from a question of economy, if there are no repetitions and all is useful? The A-B-C contains now some 960 pages, all useful, and certainly has yet left something unsaid. A subject like beekeeping is endless.

The original thought of Mr. Langstroth was the developing of his discovery of a practical hive. That is evidently why he called his book "The Hive and Honey Bee," putting the hive as the first thought. Was it not through this hive that he had succeeded in making his studies? Charles Dadant, when he undertook the translation of this famous work into French, considering the bee as the main subject, changed the title to "L'Abeille et la Ruche" (The Honey-bee and the Hive), a title which it has retained in the later translations into Russian, Spanish and now in Polish and Italian.

But Langstroth had made too many useful observations to produce his book mainly as a development of his invention, which was only the means for him to make those observations; so they are the most useful part of his book, since an invention may be described in a very few pages.

That Mr. Langstroth was rendered unable, by his head trouble, to continue the duties of his pastorate, appears plainly by the following words, written in pencil at the head of the Preface, which he was trying to rewrite: "Compelled by ill-health to relinquish the regular duties of my profession . . ." These words tallied exactly with what he said to us of his inability to "preach or pray," much as some intolerant critics rebuked him for this. Some even went as far as to say that, if he had thought a little less of bees and a little more of future life, he would have retained his healthy mind. When we consider his whole life, the kind advice he gives all through his writings on the subject of morality, his admirable good nature, the kind-

ness already mentioned, which he showed Mr. Quinby, whose hive he considered an infringement upon his own invention, and the beautiful last hours of his existence, when he died in the pulpit, we cannot but condemn the Puritan critics who found fault with one of the best men that ever lived.

The death of his son, James T. Langstroth, in June, 1870, mentioned in the American Bee Journal of September of the same year, was undoubtedly a great bereavement and probably helped to lessen his powers. Father and son had worked hand in hand, and the son might have helped to increase his father's usefulness to the beekeeping world.

Many of our readers know that Mr. Langstroth and Charles Dadant were of opposite religious views, Mr. Langstroth being a Congregationalist minister and Mr. Dadant a liberal of Unitarian opinions. But there was no disagreement between them, when it came to republishing the various passages of the "Hive and Honey Bee" containing religious exhortations. The matter was adjusted by inserting the following words, in the first passage concerning religion, of the first revisions:

"The passages referring to religious subjects have been nearly all retained in this revision, at Mr. Langstroth's request, even when not in accordance with our views. As intelligent men are always tolerant, we know our readers will not object to them."

Mr. Langstroth himself was a very tolerant man and apparently read with pleasure, at our home, some of the writings of the naturalist Haeckel on the subject of evolution which has raised such fireworks of argument lately.

A few of Mr. Langstroth's remarks on the bees leave us wondering. For instance:

"July 2, 1864, 10 a. m.—Workers just hatching in a strong nucleus, made June 13, 4 p. m., just 6 hours less than 19 days! Weather mostly warm." Are we to infer from that, that worker bees may hatch in over two days less than the regular time of 21 days? Several writers agree that there may be a slight variation. Phillips, page 103 of "Beekeeping," writes that the stages of transformation "vary somewhat." Quinby speaks of possible hatching of workers in 20 days. Cook says 21 days; Bevan also says 21 days "with slower development when the hive is weak or weather cool." The A-B-C says, "it may be 20 days, if the weather is favorable." If this remark of Langstroth is correct we must revise our opinions.

A little farther along: "August 12, 1863, 5 p. m.—Two workers hatched from eggs that were laid after 3 p. m., July 24th, 19 days and 2

*Journal July 15th 1863 in body death on a fable
unread—some nature as bee in 1881—*

This is Langstroth's writing. Can you read it?

hours. Weather very hot and nucleus in good heat."

"November 22, 1865.—In freezing nights, in a small nucleus, perfectly developed queen hatched in not over 16 days from the egg. In hot weather a queen developed in less than 15 days from the egg."

"June 9, 1868—Drones expelled from hive in the height of the honey harvest." Evidently a bad change in the weather. This confirms what we say when we hold that drones are not specially intended by the bees to keep the brood warm, as some Europeans hold, else they would not expel them for a day or two of unpleasant weather.

"For expulsion of drones, when forage is abundant, see Journal, June 1, 1868. It became suddenly abundant after a great deficiency, and bees having begun to expel, kept it up."

On the question of drone larvae in queen cells: "Journal, July 19, 1864—To show that it is a very common thing for bees to give drone larvae the queen treatment. Also August 12, 1864."

"July, 1881: Drones must be about a week old before they voluntarily take flight, from 6 to 8 days."

To show the difficulty of deciphering Mr. Langstroth's notes, we give below a little notation taken from page 55, without giving the reading of it in print. Can you make it out? A few, like our friend Allen Latham, will read it readily. But we will gladly give a year's subscription to the first ten who send us the correct text of this last sentence. It is as good brain exercise as some of the cross-word puzzles on which so many now spend leisure hours.

We must put an end to this article. To finish we will show what the apiarian public thought of Langstroth, as early as 1868. The following is taken from page 236 of the 3rd volume of the American Bee Journal, June, 1868:

"To Mr Langstroth belongs the credit of introducing to us the movable comb system; for, if each and every feature of the Langstroth invention is taken from other movable comb hives, there is, in my estimation, precious little left to buy a right to use.

"It is the same with bee books. Almost any tolerable good scholar could take Mr. Langstroth's and Mr. Quinby's books and write another from them, and he would be thought quite an author by a person who saw his production and had never seen the former. But let him see the originals, and he could pretty well guess where the other came from. Hence I believe Mr. Langstroth is the man who deserves the pay and honor." M. Wilson.

Little pecuniary profit did Mr. Langstroth get out of his inventions and his writings. Contributions to the bee magazines were not retributed in cash at that time. Neither was a book of much profit, as has been shown by Heddon's opinion of it. It was only in the past twenty years that money has been made from bee books and, as for bee magazines, he who would expect to make a living

from one of them would have to get at least twice as many subscribers as the best of them secure. Fame is the pay, but fame does not feed her devotees; they get only laurels.

A Frame Eyeletting Machine

By H. A. Scullen.

Many of the beekeepers in the State of Oregon are coming to use shoe eyelets in the end bars to prevent the wires from cutting in. A number of different home-made de-



Electric embedder.

vices have been worked out to facilitate the inserting of these eyelets. The instrument probably used more than any other is an ordinary nail set, on which is placed a small nut. This is illustrated in my bulletin on "Beekeeping in Oregon." This, how-



Eyeletting machine.

ever, is a little slow compared with the device illustrated herein which was developed by some men in Eastern Oregon, and is now being used by several. As is clearly shown in the illustration, this is worked by the feet and inserts four eyelets at a time. The eyelets cost in the neighborhood of 20 cents a thousand, the

price depending upon the quantity purchased. Wire heavier than the ordinary No. 30 is desirable.

An imbedding device like the one illustrated is also becoming very popular among the commercial beekeepers in Eastern Oregon. The originator of this device is unknown.

Stick To It, Marian!

I put my 3 colonies to bed for the winter very strong, especially the first swarm. I supplied them with every comfort except bedroom slippers and hot water bottles. They are in Kootney cases, facing south and well sheltered. I started April 23 with 6 lbs. of package bees. I feel very proud of my first year's family. I had 40 lbs. surplus from the first swarm, the others spent their time building up.

I think I must be immune from rheumatism by now. Although it is usually my own fault when I do get stung, as I often work without a smoker and do not use a veil, etc. One day I had gone through two colonies and was busy with the third, when my finger pinched a bee. I had one frame outside at the time, 3 pushed up, and the 5th in my hand. Another bee, feeling annoyed, stung me just underneath the end of my nose, which caused me to sneeze seven times. Almost blinded by tears which were streaming down my cheeks, I proceeded to return the bees to their places in their hive, all the rules with regard to handling bees running through my mind and causing me much delight, especially the one "Bees should never be jarred or handled quickly." The seven sneezes must have jarred them considerably, but they must have a sense of humor, too, for they graciously refrained from adding further stings, though they were all around and on me.

I returned them all "according to Hoyle," very slowly and gently, and then hurried off to extract the stings, as I had to attend a school meeting that evening. I always swell up quite a lot after a sting. My brain had to look around for a reducer, as I could not attend the meeting with a swollen nose. My thoughts flew at once to my old friend of over 25 years using instead of a heavy poultice for drawing out poisons, "Boracic Lint." A small piece wrung out in boiling water and put over the affected part (smooth side nearest the skin), and covered with oilskin to keep it moist, was attached to the end of the nose and kept there in a narrow tape sling. In less than one hour the poison was all out and I attended that meeting with a most respectable nose. Other times I've remained swollen for four days, at least. The reason I tell you this is that it may remove the discomfort of other people's stings if they're never tried it before. None of the other remedies are much good. I know numbers of people have never heard of B. L. for anything on this side of the Atlantic, and nothing can touch it for gatherings etc., of any description.

Marian Roberson,
Victoria, B. C.

Annual Meeting of Economic Entomologists

(Apiculture Section.)

Reported by Harold L. Kelly.

The American Association of Economic Entomologist held its 37th annual meeting at the Central High School, Washington, D. C., December 31, 1924, to January 3, 1925.

An informal meeting of the Apiculture Section was held at the laboratory of the Bee Culture Investigation Station of the Agriculture Department on December 30, 1924, where those concerned with the beekeeping industry got together for a "get acquainted" meeting. A luncheon was served by the ladies of Mr. Hambleton's staff, after which there was a general discussion of the bill drafted by the disease committee of the American Honey Producers' League for Federal assistance in bee disease control. During this discussion some of the objectionable features of the bill were eliminated, and the bill re-written for presentation at the regular meeting of the Association the following day.

The meeting of the 31st opened with a talk by Dr. E. F. Phillips on the Seventh International Apicultural Congress. This was followed by a paper by Prof. R. W. Harned of the Mississippi Agricultural College on the eradication of foulbrood in Mississippi. According to Professor Harned, there was no foulbrood in that state prior to 1904, and the disease was introduced into the state by queen bee shipments from the middle west and apiaries on flatboats floating down the Mississippi River, and not from honey imported from other states into clean territory.

Dr. Phillips gave a brief talk on "Notes on Bee Diseases in Connecticut."

Others on the program were: Dr. A. P. Sturtevant, "Physiological Factors Affecting the Development of Brood Diseases of Bees." During this discussion Dr. Sturtevant explained his discovery of the reason that the brood of bees affected with American foulbrood did not die until after being fed food made from infected honey.

J. I. Hambleton, who has succeeded Dr. E. F. Phillips as Apiculturist in Charge of the Bee Culture Laboratory, gave a talk on "The Quantitative and Qualitative Effects of Weather Upon Colony Weight Changes." In obtaining this data the temperature, humidity and weight of colonies were recorded hourly, and during some periods observations were made more frequently during the entire 24 hours of the day, as well as conditions affecting the weather. This work will be correlated with observations of Dr. Lundy on the flight activity of bees. Dr. Lundy's observations were made with the help of an instrument of his own design which made an actual count of the bees as they left the hive, and recorded their return.

Dr. S. B. Fracker talked on the "Proposed Federal Co-operation in Apiary Inspection," and the bill that

the American Honey Producers' League was contemplating having introduced in the present Congress. The action taken on the draft of this bill by the Entomologist Association will be mentioned later.

W. J. Nolen's subject was "Brood Rearing Determination." Mr. Nolen has had the tedious job at the Bee Culture Laboratory of making weekly photographic records of both sides of the brood combs of 32 colonies of bees. By this method he makes an actual count of the brood produced by the queens. Mr. Nolen has confirmed and emphasized previous observations of the fact that all eggs do not become larvæ and all larvæ do not become bees.

J. H. Merrill, of Kansas; W. A. Price, of Indiana, and Kenneth Hawkins, of Wisconsin, were also on the program, but were not present.

There was a general discussion of inspection methods in different states. Representatives of 16 states reported.

Following this the Committee on Resolutions reported. A resolution was read and carried, commending Dr. E. F. Phillips on his work at the Bee Culture Laboratory and supporting him at his new work at the Cornell University.

The resolution supporting the proposed bill for Federal assistance in bee disease control was read, and when put to a vote, was almost unanimously rejected. There was a very strong objection to the wording of the proposed bill, and it was pointed out by those opposing it that if the bill was introduced in Congress in its present form it would draw forth such serious objections from honey-producing centers that there would be no hope of it being passed. It was suggested that as this was a short term of Congress, with so little time to revise the bill, that it had better be given another year of consideration, with hopes of revising it in such a form as to remove the objections to its passage. One of the things that it was felt should be incorporated into the bill was a more definite provision for investigation and study of the problems connected with the spread and control of foulbrood.

The third resolution, which was carried, placed the Association on record as commending the work of the Bee Culture Laboratory and requesting that funds be made available to enlarge on investigations, particularly bee diseases and regional practice.

R. L. Webster, of North Dakota, was elected chairman for the year of 1925, and G. M. Bentley, of the University of Tennessee, was re-elected secretary. About 60 were present. Immediately after the election of officers, the meeting was adjourned and haste was made to the White House to attend a reception by President Coolidge to the members of the American Association

Beekeeping In Relation To Agriculture

This is the title of an 8-page Extension Bulletin from Purdue University written by J. J. Davis. The discussion of how the bees bring about cross pollination, which is so essential to the fruit industry, is well worth while. "The honeybee is probably responsible for the fertilization of 90 per cent of the deciduous fruit flowers. It is the only insect which passes the winter as an adult in large numbers and is therefore the one insect which is numerous in the spring." We quote this because it is a mighty important fact to the fruit grower, and he should certainly make this knowledge a part of his stock in trade.

Copies of this valuable bulletin can probably be secured by writing to the Purdue University Department of Agricultural Extension, Lafayette, Ind.

Correspondence Course In Beekeeping

It will be of interest to the readers of the American Bee Journal to know that North Carolina State College of Agriculture and Engineering, Raleigh, N. C., is offering a Correspondence Course in Beekeeping for those interested in this industry. This extension course is intended primarily for those who for various reasons cannot take the regular work in beekeeping at the college. It is so arranged that college credit will be given upon the satisfactory completion of the work if college requirements are met. However, persons of mature age may be admitted without meeting the entrance requirements, which makes the course open to all beekeepers.

Floods In Florida, Too

Your February, 1925, number carried an article on Florida. The recent high waters in south Georgia and west Florida played "hob" with some of the hard working members of the fraternity. J. P. Anthony, of Apalachicola, advises that approximately 2,000 colonies were lost in his section through the flood, and there are probably many small men to add to the list. Anthony personally lost about 550, J. L. Morgan had about 200 colonies wiped out. The worst feature of the whole thing is that the tupelo flow is near at hand and the bees are in bad shape. The water was the highest known in years. We have not been able to hear from some of the beekeepers in the northwestern part of the state. However, I anticipate that each and every one lost in the floods.

WEAJ, March 4, 8:30 P. M.

R. A. Morgan, of Vermillion, S. D., will broadcast a talk on bees and honey, March 4, 1925, at 8:30 P. M. from station WEAJ, Vermillion, S. D. Wave length 283.

THE EDITOR'S ANSWERS

When stamp is enclosed, the editor will answer questions by mail. Since we have far more questions than we can print in the space available, several months sometimes elapse before answers appear.

POLLEN SUBSTITUTES

I went over to my father's the other day to grind some corn. When I came home I left the corn in the wagon while I went to see about the bees and to clean some of the dead bees out of the way of the others. It was the first day that had been warm enough for the bees to fly for about a month. When I went back to the wagon to unload my chop the bees were at work on it. I watched them a little bit; they would go down in the chop, work their wings a little and rub their legs together like they were gathering pollen. They were getting the fine dust or meal out of it on their legs. Will it take the place of pollen, or would it hurt the bees, or would it be good for them?

MISSOURI.

Answer.—We have often given flour to bees when there were no flowers, in early spring. We never regretted it. We have had them take hundreds of pounds, sometimes as much as 10 pounds a day in a single apiary. We are told that bees cannot digest starch. Well, perhaps grown-up bees cannot digest it, but we have seen it used for the larvae and it was not wasted. Just as soon as they find pollen, they leave the flour. Corn meal, rye flour or wheat flour are all good. We generally used wheat flour. We put it in boxes in a sheltered place where the sun shines. They may be attracted there with old combs.

Of late years, we have had so many irons in the fire that we have neglected these little matters.

MAY DISEASE

I. I had one hive last spring that the bees seemed to lose the use of themselves; they looked large and fat, would crawl out of the hive with wings spread or drooped and they would quiver.

There was not any sign of dysentery about the hive. They finally built up to a strong colony and made a super of honey.

2. What is the matter with bees that seem to get about one-third less in size than the normal bee and look hard like a wasp, and black and slick? Their wings and all seem as if they were glazed; they cannot fly very well, although I have seen some of them at work after they get in that shape, the first that I ever saw of this disease I ordered some Carniolan queens from Michigan and I lost one of the hives that I introduced one of the Carniolan queens to, the next spring. I have destroyed several hives, but the disease still shows once in a while yet, but not in as serious a way. I was visiting an old friend of mine in North Carolina some six or seven years ago, and he had one hive of bees just like these, and then I was there a year or so later and I asked him what became of that hive of bees. He said that he cured them by requeening.

VIRGINIA.

Answers.—1. The disease you refer to is what has been variously called May disease, vertigo, paralysis, and Isle-of-Wight disease.

The Isle-of-Wight disease has been found accompanied by a mite which occupies the breathing organs of the sick bee, and this mite has been called "tarsonemus woodi." But it has not yet been found in diseased bees in this country. So they suppose that the paralysis is caused by bad food in spring, or some bad pollen or bad honey. It usually gets cured by natural causes, when the weather gets good, but some hives are very much weakened by it and occasionally some die. We would advise you,

when you see any of this trouble, to send a lot of the diseased bees to Mr. Jas. I. Hambleton, Bureau of Entomology, Washington, D. C., by putting them in a pasteboard box with a little moistened sugar. There are many things that we do not know yet, and this is one of them.

2. The bees that get small and wrinkled and appear glazed are old bees that have lost all their hair or fuzz. This makes them look smaller than usual. There is perhaps also some disease connected with this appearance, as they have studied the matter in England and found a bacillus which they called "Bacillus depilis," because the bees lost their hair. Probably, in your case, the bees had more or less of the trouble mentioned in No. 1. Changing the queen is a good remedy, as she sometimes becomes sick also.

NERVOUSNESS IN BEES

In September number A. B. J., you answer question No. 3, under the caption "Granulated Honey," with the following statement: "The Golden Italians are so persistent in holding their color that a slight mixture is sometimes very hard to detect by the color of the bees. Pure Italians are always quiet on the combs and do not run around as the hybrids and blacks do, unless they are mismanaged and smoked to excess."

As I have had what I considered pure Italians in my yard that were excitable, and behaved on the combs in much the same manner as hybrids and blacks, I would ask: Is it not true that different strains of Italians vary in characteristics? Are all pure Italians quiet on the combs? Are not some strains of Italians more excitable than others?

The only way I know how to distinguish the purity of this race is by the three yellow bands. When all the bees of a colony were thus uniformly marked, I have heretofore been under the impression that they were pure. Where they varied in marking with only one or two yellow bands, I have been determining them to be hybrids.

As per your words, "That a slight mixture is sometimes very hard to detect by the color of the bees" it is possible that the bees referred to were mixed with goldens. However, as I purchased the queens of the bees mentioned in this article from people of many years' experience, it surely does not seem that they would take any chance of deliberately destroying their trade and reputation by breeding from anything but pure stock and to their mind the best procurable.

In consideration that the words "Mismanaged and smoked to excess," does not apply in this case, and my experience, and your answer ("That pure Italians are always quiet on the combs") do not tally, the matter of determining when Italians are pure, is to me a perplexing problem.

In accordance with your answer to this question I take it for granted that the behavior of bees on the combs, is another distinguishing mark as to their purity.

MISSOURI.

Answer.—Are all pure Italians quiet on the combs? Are not some strains of Italians more excitable than others?

I have never seen pure Italians that would run about the combs as blacks and hybrids do. I have seen cross Italian bees in one apiary in Italy, near Bellinzona. But the owner was a very careless man, who opened hives without smoke and did not seem to care whether he aroused their anger. Bees did not sting him; there are men whom bees sting very little, and he did

not seem to realize that bad temper in his bees was not a recommendation. Everywhere else, in Italy, the bees were quiet on the combs and easy to handle, with a minimum of smoke.

There are Goldens which undoubtedly have Cyprian blood in them, often unknown to the owner. We had Cyprians ourselves and found it very difficult to eradicate them. They are very active bees and their drones undoubtedly were active also. But in spite of Benton's recommendation of them, I do not wish to raise anything from them. Most probably the ill-tempered Goldens are descendants of a mixture of Italians and Cyprians. Some people are so fond of yellow color that they would breed from hornets if they could improve the color of their bees.

To my mind pure Italians should hang to the comb with such persistence that it may be taken into the house and exhibited to visiting ladies without the bees showing any signs of anger. Of course they must be properly handled.

HIVE SPACER—MOVING—SNOW

1. How much space should there be between the bottom of brood frames and floor of hive body?

2. How much space between the bottom of super frames and the tops of brood frames? We find at times that the bees are inclined to build comb between the last named parts and also in some hives fasten the brood frames to floor of hive with extra comb.

3. My husband is gradually building up a small bee business, and would be glad to have you answer these questions: When is the best time of year to move bees? We only want to move them about 150 or 200 yards from where the hives are now.

4. Some hives are under two or three feet of snow, but when examined seemed alive, as snow was melted away from entrance when dug out. Will snow hurt them, with the temperature below freezing, and snow not packed around the entrances? We have had continued cold here (northern Idaho) for two months, with no chance for the bees to fly. They all have plenty of stores; some have sugar syrup.

IDAHO.

Answers.—1. The space between frames and bottom may be more or less and the bees will not build comb between them if there is ample room above. But the regulation space is $\frac{1}{2}$ of an inch, and when this space is exact, there is very little trouble about bees building there, even if they are short of room. However, in summer, it is much better to have increased space, by raising the hive from the bottom in front. Sometimes we raise it so as to have 2 or 3 inches of space below the frames, for ample ventilation.

2. Less than $\frac{1}{4}$ inch between supers and body frames causes the bees to put propolis between and glue them fast; $\frac{1}{2}$ being also the proper bee space.

3. The best time to move the bees is when they have the least honey, in spring before fruit bloom. But to move them only 200 yards or less, the best time would probably be at their first spring flight, if the weather is warm enough so they will not get chilled in trying to recognize the spot. Be sure and disturb them greatly at the time of moving, so they may know that something is wrong. Then place a slanting board in front of the entrances, so they may notice that their location is changed. If you leave the weakest hive behind and move it only after the other bees have become accustomed to the new location, this hive will have gathered all the bees that may not remain at the new location and will then be strong in population.

4. Snow does not hurt colonies, if it is not

frozen to the entrance to prevent their securing pure air. The snow is really a protection and I would not disturb the bees in the least, when they are thus covered, until a warm day comes, such as would permit them to take a flight. Then clean the snow away from the entrance and spread ashes or straw, or anything handy so that they will not alight on the snow when they come out. But as long as the temperature is low, they must be left alone, as a disturbance will cause some of the bees to leave the cluster and get chilled. Besides, it will cause them to eat more than if left alone.

SPRING FEEDING

I wintered my bees in good shape, except one swarm that died; why I don't know; it was a hive full of honey. It was well packed. Now this is not what I am after. The hive has part of its full combs mouldy, though the honey is sweet, but part, a very small one, shows thin, watery honey. Can this hive with frames be given back to a new swarm or must it all be destroyed because of the thin watery honey which I take is honey spoiled? The swarm was not very strong but well sheltered in one single hive with plenty of food. I only want information on the honey item, and would be obliged if I could get word soon, though this is a busy season for you.

IOWA.

Answer.—Watery honey, even in mouldy comb, is all right for spring feeding, when the bees can fly about every day. In order to use up what you have in that hive, exchange a comb of it for a comb of a hive that needs feed. When colonies are short of stores in early spring, at a time when the bees can fly almost every day, the supplying of such a comb of honey is good, even if the honey is lightly fermented. But it would not do at all for winter, and that is probably why your colony died.

However, you must be sure that the colony in which this honey was did not die of foulbrood, for the honey would be sure to transmit the disease. In such a case, the only thing you can do is to melt up the comb and heat the honey to the boiling point of water for at least a half hour. Then you may use it for spring feeding.

GRADING—SUPER—MOVING

1. Are all queen breeders bonded—those advertised in journals?

2. Who is the dealer now selling the new Government honey grader?

3. Is there anybody in the United States who owns a colony of bees from the Algerian race, those mentioned by Baldensperger, July, 1921, page 275, in the American Bee Journal?

4. When a brood chamber is full of brood and there are plenty of fielders, in fact the colonies are normal during a heavy honey flow, and the bees are refusing to work in the supers until some brood is removed, why do they refuse to work until some of the brood is removed? When placing a division board in a Modified Dadant hive a $\frac{3}{8}$ -inch space below so as not to smash the bees is a good idea, but why the $\frac{3}{8}$ -inch space on top between the division board and the inner cover?

5. When making the slotted bottom in the bars, 75 per cent of the slotted bottom splits. Why not drill holes in them before delivery is made?

6. Can hives of bees with comb be taken to Michigan with an inspector's certificate from Ohio?

OHIO.

Answers.—1. The American Honey Producers' League is now making an effort to have the different queen breeders bonded, but so far it has not reached any definite conclusion. However, all queen breeders advertising in the American Bee Journal are presumed to be honest and reliable in fact, we know that two of the largest bee journals require proper recommendation and proper filling out of blanks before they accept the advertisements of queen breeders. There is no one at present selling the Gov-

ernment honey grader, inasmuch as they have not yet perfected it. The G. B. Lewis Company of Watertown, Wisconsin, have honey graders which they are putting out and which are very good.

2. We know of no one having bees from the Algerian race in the United States.

3. We do not understand why your colonies should not work with plenty of field bees and a chamber full of brood. We believe there must be some other circumstance here causing the bees to be idle when they presumably have plenty of field work and there is a big flow on. Ordinarily, they should be storing honey, although it may be a lack of ventilation. Try raising the hive's bottom board to get more ventilation.

4. The Modified Dadant hive was originated by the Dadants, who use, entirely, an enamel cloth over the frame instead of the inner cover. This being the case, of course, the division board is arranged so as to be flush with the other frames. We built it, of course, to have it come flush with the inner cover, but care must be taken not to crush bees when replacing the inner cover.

5. Your suggestion with reference to the splitting of bottom bars is being referred to the manufacturers.

6. We know of no regulation in Michigan prohibiting the shipping of bees in the combs, from other states, provided they are properly inspected. We would suggest, however, that you write direct to the State Inspector, Mr. B. F. Kindig, East Lansing, Michigan.

REQUEENING—USE OF FOUNDATION

1. In putting on a section comb honey super how much space should there be between the top of brood frames and bottom of section holders?

2. If a colony is queenless in early spring how soon can I give them a frame of brood and eggs to insure the queen of having drones to mate with?

3. In using 5% shallow extracting frames with slotted bottom bar for producing bulk comb honey, which is the best foundation to use?

4. In using 5% old style frames with solid bottom bar for bulk comb honey, which is the best foundation to use? Should it come all the way to the bottom bar? Will it have to be wired to prevent sagging?

5. How many frames should you use in a 10-frame super?

6. In using top and bottom starters in sections, should you use thin or extra thin surplus?

7. I have a swarm in an 8-frame hive and the combs are in poor condition to handle. Would it be all right to fill a 10-frame hive with wired foundation, put in the queen on a frame of brood, put on the excluder and put the 8-frame hive on top and let them fill it with honey? Can this be done at time of fruit bloom?

8. To prevent swarming, when they start to rear queen cells would it not be a good idea to kill the queen and cut out all queen cells but one and let them rear a new queen?

ILLINOIS.

Answer.—1. There should be what is called a bee-space, not less than $\frac{1}{4}$ inch nor more than $\frac{7}{16}$ of an inch. If they have a half inch space, they will build comb between the two. If they have less than $\frac{1}{4}$ inch they may glue the two stories together. The proper space, called a bee-space, is $\frac{3}{16}$ of an inch.

2. This depends upon the spring and upon how strong your other colonies are. Whenever your bees have drone brood, you may count upon having drones by the time a queen is reared. But rearing a queen in a colony found queenless in spring is not very satisfactory, unless you strengthen it with brood and bees.

3. Medium or light brood foundation may be used. They build more readily on medium, and it is less likely to break down

under the weight of honey, if the bees should delay in strengthening it.

4. Thin surplus is probably the best for bulk comb honey. Give it in full sheets, but try and have it well fastened and built out before any honey is put into it. Wiring is hardly advisable for comb honey production.

5. We never use over 9, and when they are built out, we sometimes use only 8.

6. I prefer extra thin foundation in sections. But that is not an invariable rule. Many people use only thin surplus foundation in supers.

7. Yes, it will do, if not done too early. I am under the impression that, during fruit bloom would be too early. That depends upon the strength of the colonies at that time. No two seasons are alike in that respect.

8. Killing the queen to prevent swarming and reducing the queen cells to one looks very much to me like killing the hen to prevent her from setting. Besides, if the bees have young brood and eggs, there will be a chance of their rearing other queen cells for almost a week afterwards. If you must prevent swarming, better use the Demaree method, or make an artificial swarm with that queen instead of killing her.

BUYING NUCLEI

Do you think it would be profitable to buy 3-lb. nuclei to fill out hives? We have a 4-acre orchard; we have 15 hives of your style. Foulbrood closed up things for us; we expect to kill the two last foulbrood colonies and start anew.

IOWA.

Answer.—Yes, it will be all right to order 3-pound nuclei to fill your hives again, in spring, say about the time of fruit bloom. But you should place your order early enough to make sure of not being disappointed when the time comes.

Besides, you must be sure and disinfect the hives that have had any bees in them, because of the danger of foulbrood again. The best is to singe them with a blow torch, such as is used by tanners or plumbers. Then put in fresh guides or sheets of foundation in the combs and give your bees on them.

In that way you will be taking no chances, unless there is disease in your vicinity.

SPRAY REPELLENT

Is it advisable to use a bee repellent in sprays containing one-half pint or more of nicotine-sulphate to each 100 gallons of spray? If so, what is the most satisfactory repellent?

NEW YORK.

Answer.—My opinion is that the nicotine is a sufficient repellent in itself. I have never noticed bees working on any solution containing nicotine. Perhaps if the section contained much sweet material, it might attract the bees anyhow, but I hardly think so. I do not see the need of using any sweets whatever in sprays.

If it was necessary to use other repellents, a very light amount of carbolic acid might do, but one should use only a few drops in a barrel of spray, owing to its strong odor and its strength.

MOVING IN WINTER

I have 23 hives of bees and want to move them about nine miles. Would it be better to move them now or wait until the spring?

ILLINOIS.

Answer.—Yes, it will be all right to move your bees during the cold weather, preferably towards the beginning of spring, if you could select a day when they would have a good flight as soon as they arrived at the new place.

Bee Law For West Virginia

Here is a synopsis of the apiary law pending in the present session of the Legislature of West Virginia:

Sec. 1 provides for the appointment by the commissioner of agriculture of a practical resident beekeeper of the state who shall be selected and recommended by the State Beekeepers' Association, thus taking that office out of politics, and who shall give lectures on the principles involved in the interdependence of the apicultural and horticultural industries. As such apiarist he is in charge of the apicultural work.

Sec. 2 makes it unlawful for anyone to keep bees in the state in his possession or under his control which are diseased, and requires all diseases to be reported to the apiarist.

Sec. 3 requires that the apiarist give instructions for the treatment of all foulbrood diseases and to visit such colonies a second time after a period of ten days, and if not treated to treat them himself and collect from the owner the expenses incurred in the treatment, and to turn such monies into the State Crop Pest Fund.

Sec. 4 makes it unlawful to keep bees in box hives or gums after the 1st day of July, 1927.

Sec. 5 makes it unlawful to expose bees to disease, etc.

Sec. 6 makes it unlawful for anyone to import bees into the state or second-hand bee ware unaccompanied by a certificate from the proper officers certifying that such are free from all contagious diseases.

Sec. 7 makes it unlawful for any person or transportation company to transport such shipments into the state, etc.

Sec. 8 provides for the punishment of violations of sections 6 and 7.

Sec. 9 provides for the formulation and promulgation of rules and regulations for the enforcement of the provision of the act.

Sec. 10 provides for the punishment of violations of sections 2, 3, 4 and 5.

Sec. 11 provides that apicultural work shall begin not earlier than the first day of May and cease not later than the 15th day of November of each and every year, and provides a maximum of expenditures of a sum not greater than thirty-five hundred dollars, and provides for the publication and distribution of instructive bulletins or books to the extent of an expense not greater than one thousand dollars.

All fruit growers and beekeepers of West Virginia ought to appeal to their representatives in the Legislature to pass the bill. They should attend the meeting of the beekeepers to be held in Charleston on the 2nd day of April, 1925. This meeting is called for a discussion on the mutual interdependence of the two pursuits of apiculture and horticulture. Not all fruit growers understand the fact that they cannot produce perfect fruit without cross pollination of the blossoms and that dependence must be had upon the bees for the principal part of this work.

T. K. Massie.

Mayeux's Light Three Banded Bees and Queens

Last year we sold four thousand packages, the largest number ever known of a Louisiana beekeeper, with not more than a 2 per cent loss. We are better equipped this year, have more bees to draw from. Each package contains a select untested queen with a comb of honey (natural feed) for transit. Each package goes out with a Government Health Certificate. 15 per cent down, balance at shipping time. Will start shipping April 15.

3-pound Packages		4-pound Packages	
10	\$ 45.00	10	\$ 52.50
25	108.75	25	127.50
50	212.50	50	249.70
100	400.00	100	475.00

Remember, each package includes a select untested 3-banded queen.

5-pound package with tested queen for breeding purposes with two frames brood, \$8.00 each.

C. A. MAYEUX, Hamburg, Louisiana

Important to Minnesota and Wisconsin Beekeepers

Save money by ordering Lewis and Dadant goods at factory prices from Winona or Graceville Minnesota.

We buy in car lots and ship same day order is received. Wired foundation and slotted frames is the greatest invention of several years. We like rush orders

Standard Lumber Company

WINONA, MINNESOTA, and GRACEVILLE, MINNESOTA.

April 1st

—TWO THOUSAND PACKAGES—

July 1st

Italian Bees and Queens

1925

NUCLEI WITH QUEEN

3-frame—1 to 9	\$5.00 each
10 to 24	4.60 each
25 or more	4.25 each
100 or more	4.00 each
2-frame—1 to 9	3.75 each
10 to 24	3.40 each
25 or more	3.25 each
100 or more	3.00 each

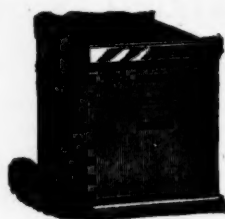
COMBLESS PACKAGE WITH QUEEN

3-pound—1 to 9	\$5.00 each
10 to 24	4.60 each
25 or more	4.25 each
100 or more	4.00 each
2-pound—1 to 9	3.75 each
10 to 24	3.40 each
25 or more	3.25 each
100 or more	3.00 each

Extra queens, \$1.00 each. After June 15th, 75 cents each; \$60.00 per hundred. Ten per cent books your order.

Safe delivery and satisfaction guaranteed. Your business solicited.

W. E. BUCKNER, Mt. Vernon, Ga.



MR. BEEKEEPER—

We have a large plant especially equipped to manufacture the supplies that you use. We guarantee all materials and workmanship. We ship anywhere. We allow early order discounts and make prompt shipments. *Write for free illustrated catalog today. We pay highest cash prices and trade for beeswax.*

LEAHY MFG. CO., 90 Sixth Street, Higginsville, Missouri
J. W. ROUSE, Mexico, Missouri. Texas Distributors, A. M. HUNT & SONS, Goldthwaite, Texas

MONEY SAVED. TIME SAVED

BEE SUPPLIES

Roots Good, at factory prices with WEBER'S service. Send us a list of your wants and we will quote you prices that will save you money

C. H. W. WEBER & CO., CINCINNATI, OHIO
 2163-65-67 CENTRAL AVENUE

LEWIS BEEWARE DADANT'S FOUNDATION

In Memphis, Tennessee ready for shipment



Mr. Frazer, a Tennessee boy, presides over the big office and warehouse shown at left. He plans to give 24-hour shipment of all orders in 1925 and his sole job is to answer your letters and handle your orders. Ask him for a free copy of "How to Produce Honey."

G. B. Lewis Company
 844 North Front St.
 Memphis, Tennessee

What are Your Package Bee Requirements?

If you want good bees and queens and prompt service at a fair price, send for our literature giving prices, etc.

Geo. A. Hummer & Sons, Prairie Point, Miss.

Shipping Point, Macon, Miss.

Meetings and Conventions

THE LEAGUE MEETING

There are a few outstanding things about the meeting of the American Honey Producers' League in Chicago January 21-23. The enthusiasm was inspiring. There was the feeling that if good did not come from the meeting there would be no explanation for failure. There was a healthy balance in the Treasurer's report and a fine membership totaling 1,650 names. The states represented were Colorado, Illinois, Indiana, Iowa, Michigan, Nebraska, Ohio, Wisconsin and Wyoming.

The next convention will be held late in January, 1926, at Cincinnati, and it is hoped that this meeting will prove of particular interest to southern beekeepers.

B. F. Kindig, Lansing, Mich., was re-elected President and C. P. Campbell, Grand Rapids, Mich., Vice-President. Dr. Ernest Kohn, Grover Hill, Ohio, was elected a member of the Executive Committee for the term ending in January, 1928. The hold-over members are Frank Rauffuss, Denver, Colo., and E. S. Miller, Valparaiso, Ind. R. G. Richmond, Colorado State Apiarist, Ft. Collins, Colo., becomes the new Secretary, succeeding Dr. Fracker of Wisconsin. The important work of the meeting follows:

Trademarks for Labels and Stationery

A plan for using the League trademark with a new slogan on labels, posters, stationery and containers was presented and as soon as possible these materials will be offered to the members.

Breeders' Bonding Plan

According to this plan, when any member of the League buys bees or queens the Surety Department of the League backs up the breeder's guarantee.

Shipments must be made within five days of the date specified in the order: Queens must be mated and laying before shipment, must arrive in good condition and shipments can be made only from apiaries certified to be free from foulbrood. All packages shall have at least 65 per cent of the weight stipulated in living bees.

If the member suffers loss he shall secure a bad order receipt and notify the seller within thirty days; in the case of mismated queens, sixty days. Liability is limited to the amount paid by the buyer to the seller.

In the future a list of the bonded breeders will be put in the advertising columns of the leading bee journals and some form of designation used in the display ads. This arrangement is intended to stimulate the sale of package bees and queens. All claims will be passed on by a Board of Governors consisting of the Attorney, two from the Executive Committee of the League, and two breeders, the latter elected by the breeders themselves.

Federal Bee Disease Co-operation

After correspondence with all the apirary inspectors in the United States, it is provided that state officials shall retain control of the work in the states and the shipment of bees or of used equipment shall be under state or federal certification as to freedom from disease. Provision is also made to protect the federal bee culture office from being swamped with administrative duties.

Honey Grades

The Committee on Standardization reported a complete set of grades for comb, extracted and bulk honey and the committee was instructed to recommend the grades to the Federal Department of Agriculture for adoption with the hope that they be published before the honey crop of 1925.

New Jersey Annual

The annual meeting of the New Jersey Beekeepers' Association was held at Trenton during Agricultural Week under the auspices of the State Board of Agriculture, Thursday and Friday, January 15-16, as scheduled.

The program included some of the state's larger commercial beekeepers and experiences related by novices. Most of the every-day problems of beekeeping were vigorously discussed. These meetings afford occasion for beekeepers from all sections of the state to meet socially, discuss their individual problems and exchange ideas most profitably, and as such this meeting was certainly a very enjoyable success.

Mr. R. D. Barclay was re-elected President for the tenth term, entirely against his expressed wish. Mr. E. G. Carr, "The Indispensable," was also unanimously re-elected as Secretary-Treasurer. The number of his terms is beyond the memory of the scribe. Three new Vice-Presidents were elected, the preceding trio having grown gray in the service.

The membership now is something over 440—not a bad showing for this small state.

Wisconsin Bee Disease Tour in August

An opportunity to look over Wisconsin bee disease clean-up areas in several stages of development will be given all interested, in August. A tour through northern Wisconsin is planned, visiting places with many features of interest connected with the eradication of American foulbrood.

The tour will take the place of the annual bee chautauqua, and the apirary inspection staff of the State Department of Agriculture is planning an interesting program.

Five days (August 10 to 14) will be spent in visiting the apiaries of half a dozen counties. Among the leading features will be a demonstration of the use of the community disinfecting outfit for Hutzelman's so-

(Continued on page 129)

BOLENS Garden Tractor

Does Seeding, Cultivating and Lawn Mowing with greater saving of time and effort. Attachments for different jobs are instantly interchangeable. Many indispensable, exclusive features such as the patented arched axle, foot control, instant hitches, etc. A boy or girl will run it with delight.



Write For Catalog

GILSON MFG. CO. 415 PINK ST.
PORT WASHINGTON, WIS.



WESTERN BEEKEEPERS!

We handle the finest line of bee supplies. Send for our 1924 price list. Our quotations will interest you.

The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

PORTER



**BEE
ESCAPE
SAVES
HONEY
TIME
MONEY**

For sale by all dealers.
If no dealer, write factory.

R. & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

(Mention Am. Bee Journal when writing).

PURE BRED THREE-BAND ITALIAN QUEENS AND BEES

1 untested queen	-----	\$1.00
6 untested queens	-----	5.40
12 untested queens	-----	10.00
Tested queens, each	-----	2.00
Package bees and nuclei a matter of correspondence.		

Safe arrival and satisfaction guaranteed.

M. E. EGGERS,
Covington, Louisiana.



HUNTING AND FISHING

HUNTING & FISHING is a monthly magazine crammed full of hunting, fishing, camping and trapping stories and pictures, valuable information about guns, revolvers, fishing tackle, game law changes, best places to get fish and game, etc. Biggest value ever offered in sporting magazine. Only \$1.00 for THREE WHOLE YEARS. Or send 25c in stamps or coin for six months trial.

HUNTING & FISHING MAGAZINE,
305 Newbury St. Boston, Mass.

PLANS for Poultry Houses

All styles, 150 illustrations; secret of getting winter eggs, and copy of "The Full Egg Basket." Send 25 cents. INLAND POULTRY JOURNAL, Dept. 56 Indianapolis, Ind.

TENNESSEE-BRED QUEENS

Fifty-two Years' Experience in Queen-Rearing
Breed Three-Band Italians Only

	Nov. 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12
Untested.....	\$2 00	\$ 8 50	\$15 00	\$1 50	\$ 7 50	\$13 50	\$1 25	\$ 6 50	\$11 50
Select Untested.....	2 25	9 50	18 00	1 75	9 00	15 00	2 50	7 50	13 50
Tested.....	3 00	16 50	30 00	2 50	12 00	22 00	2 00	10 50	18 50
Select Tested.....	3 50	19 50	35 00	3 00	16 50	30 00	2 75	15 00	21 00

Select tested, for breeding, \$7.50.

The very best queen, tested for breeding, \$15.

Capacity of yard, 6,000. I sell no bees by the pound or nuclei, except with high-priced tested and breeding queens.

Queens for export will be carefully packed in long-distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, Spring Hill, Tenn.

ITALIAN QUEENS

Our Old Reliable Three-banded Italians have a reputation as honey-gatherers. They are of an exceptionally vigorous, long-lived strain of bees. They are gentle, prolific and very resistant to foul-brood. We are now booking orders for spring delivery, one-fourth cash. Safe arrival guaranteed in United States and Canada. Circular free.

Prices for April, May and June, 1925:

Untested, \$1.25; 6, \$6.50; 12, \$12. Tested, \$2.50; 6, \$14. Select untested, \$1.50; 6, \$8.00; 12, \$15. Select tested, \$3.00.

JOHN G. MILLER 723 C STREET Corpus Christi, Texas

1925

PACKAGE BEES

1925

THREE-BAND ITALIANS ONLY

If you are in the market for bees, let us quote you prices on our strain of Yancey Hustlers. Reports from all parts of the country prove that you cannot buy better honey producers. Hundreds of packages already booked for next spring delivery. Place your order as soon as possible and secure shipping date you desire. No more orders will be accepted than we can fill promptly.

No disease in our apiaries, and never has been. Safe arrival and satisfaction guaranteed on every package and queen shipped.

CANEY VALLEY APIARIES

Yancey Bros., Owners, Bay City, Texas.

The Iowa Idea For Betterment of Bee Industry

By F. L. Clark.

That Iowa in five years has risen from fifth place to second place among the states in honey production, Dr. F. B. Paddock, State Apiarist and Professor of Entomology at Iowa State College, believes is due in good part to the Iowa idea of demonstration hives.

"There are 16,000 beekeepers in Iowa," said Dr. Paddock to the writer in a recent interview on the status of beekeeping in Iowa, "and the last census showed the average production of the 225,000 colonies owned by these beekeepers to be 35 pounds a year. We have gone onto these farms, taken five colonies of bees on each, permitting the owner to choose the five, and invariably he picks the poorest, cared for them and produced two and three times 35 pounds per colony. Our method is to get the beekeeper to equip the five colonies according to our specifications. Then we operate them as much as possible, making about five trips a season, and leaving directions for care between our visits.

"In one instance we produced such an increase of honey in the five demonstration colonies over the man's own bees operated right alongside that the honey per colony sold for \$17.25 more. In another apiary owned by a woman, the five colonies we took care of earned more for her than the whole 22 others in the beeyard.

"It is not merely the individual beekeeper who, it has been demonstrated in Iowa, is benefitted by these demonstrations," Dr. Paddock said. "The demonstration yards become sort of community centers for all interested in bees in any given locality. People come to learn and we instruct them and help them with their problems the same as we do the owners of the demonstration apiaries.

"We are not trying to get more beekeepers in Iowa, but better beekeepers, and to accomplish this by taking the beekeepers' own tools and showing him how to do better with them. If we can increase the average production per colony just one pound a year, I figure it would add a quarter million pounds to the state's output."

The beekeepers' job at present is two-fold, Dr. Paddock thinks. He should produce more and better honey and at the same time help educate the public to greater consumption of honey. "Show people," he says, "that it is an almost perfect food. 'Nature's own sweet' and far better to eat in great quantities than sugar, which the American nation is now consuming at the rate of 104 pounds per capita a year. Particular emphasis can well be put in an advertising campaign on the high energy content of honey. Honey when one is tired acts as a stimulant."

Iowa.



The Engravings appearing in this publication are made by the

Waterloo Engraving & Service Co.
Waterloo, Iowa

Engravers, Electrotypers, Commercial Photographers,
Photo Retouchers, Designers

Write if you need designs of Signature Cuts, Letter Heads,
Labels, Etc



Meetings and Conventions

(Continued from page 127)

lution near Janesville. The state owns the trailer on which the outfit is transported, and also the tanks and extractor, while the beekeepers pay for the material through a revolving fund of the Rock County Association.

Visits will be made to many of the yards of Jefferson, Waukesha, Milwaukee, Dodge, Fond du Lac and Sheboygan Counties. These districts include two types of areas; townships where some of the most successful clean-up work has been done, and others where no start has yet been made and where profitable beekeeping is impossible on account of a heavy infection.

A complete detailed program of the tour will be published early in the summer and will be sent to inquirers on request. Beekeepers may join the party at any point and stay with it as long as they wish. The usual summer business session of the State Association will be held at some point on the tour.

Everyone interested is invited, and the local beekeepers along the route will provide transportation for those who do not bring their own cars.

Anderson County, North Carolina, is a Live Wire

In a little paper called "The Bee Bulletin," issued each month, the Anderson County (North Carolina), Beekeepers' Association keeps everything of interest to its members always before them. It should not be hard to get at least 50 per cent of the beekeepers of the county to dig out their membership dollar when this much interest is taken in them. The Bulletin has a classified advertising column, and is also supported by advertising from business firms in Anderson and surrounding towns.

No cause for Anderson County beekeepers to kick at their Association. Every beekeeper who doesn't join just "has bees." You know the kind.

New Officers in North Carolina

At the regular winter meeting of the North Carolina State Beekeepers' Association, held at State College, Raleigh, on January 21, the following officers were elected for 1925:

President—J. R. Pinkham, Washington, N. C.

First Vice-President — Jas. M. Gibbs, Reidsville, N. C.

Second Vice-President—Mrs. J. M. Morris, Franklinton, N. C.

Secretary-Treasurer—J. E. Eckert, N. C. State College, Raleigh.

Assistant Secretary-Treasurer—F. B. Meacham, N. C. State College, Raleigh.

Kansas Meeting

The Kansas State Beekeepers' held their annual meeting at the Central Y. M. C. A., at Topeka, January 27 and 28. Mr. O. A. Keene, of Topeka, was elected president, Frank Hill, of Sabetha, vice president, and Geo. Pratt, Topeka, secretary.

State Federation Officers in New York

At Syracuse, December 2-3, the Empire State Federation of Beekeepers' Associations re-elected Messrs. Gray and Hall President and Secretary-Treasurer, respectively. Earl Rulison was re-elected Director. C. S. Rowe, of Kingston, was elected as a new Director and as a Vice-President. The Federation voted to meet at the home of Mr. A. A. French at Theresa, N. Y., on the first Friday in August, 1925. Mark this date on your new calendar.

Western Michigan Meeting

On January 20th, the Western Michigan Beekeepers' Association met at A. G. Woodman's, Grand Rapids. There were between 50 and 60 out for an enjoyable program. B. F. Kindig, E. Ewell and G. H. Cale were the principal speakers.

Woodman is the well-known maker of the Bingham Smoker. He has a new factory still smelling of paint and cement, but it was a treat to pry about in it and see the many surprising things that come into the making of a smoker.

Washington State Meeting

The second annual meeting of the new Washington State Beekeepers' Association met at Yakima, January 26, and 27. Eleven counties were represented this year, while there were twenty-five last year.

Prof. H. A. Scullen was on hand and helped to make the meeting a success. In one of his talks he dwelt upon the cardinal virtues of a beekeeper, among which was honesty. After hearing such an exhortation you may well understand how astounded we were at an incident which took place during the banquet hour. In a short lull in the buzz of conversation, there was a plunk of a bottle falling upon the floor—and it came from Scullen's hip pocket! Would you believe it? And to think of the responsible position he holds, not only being a leader among the beekeepers of Oregon, but also in the Boy Scout work. Considerable fun was had at his expense during the rest of the convention. It was found out later that it wasn't what it seemed, only a medicinal preparation he was using to assist him to recover from a gas attack he was in while waging war upon American foulbrood with the aid of Dr. Hutzelman's solution.

Miss Helen Steiner, Secretary of the Association, gave an interesting talk upon advertising. A portion of her talk was a revelation. She emphasized the use of warm colors upon labels, colors that were appealing rather than repelling, and mentioned red as an example. Mr. York wanted to know immediately if that was the reason the girls used rouge upon their lips. We were surprised to know that Mr. York even noticed that girls use rouge, but more so that Miss Steiner would tell such secrets.

The majority of the program of the convention dealt upon the subject of marketing and reached a cli-

Bees \$1 a Pound

Order quick, while they last.

In lots of 50 packages or more, \$2 each for 2 lbs. bees; \$3 each for 3 lbs. bees. Queens \$1 each.

Safe arrival and satisfaction guaranteed.

W. H. MOSES,

Lane City, Texas, U. S. A.

500

Regular customers demand MACK'S Queens. We will have queens for 500 more and at these prices you CAN'T GO WRONG. We guarantee that. Select untested only \$1.00 each, \$10.00 per dozen. Write for prices in larger lots. Booking orders now.

HERMAN MCCONNELL

(The Bee and Honey Man)
Robinson, Illinois.

Package Bees

QUALITY — SERVICE
None better at any price.
Illustrated circular free.

Van's Honey Farms, Hebron, Indiana

1925 Catalog of Beekeepers' Supplies ready for mailing.

Three-ply foundation and a stock of standard make of supplies kept in stock for prompt shipments. Send us your inquiries and ask for catalog. Prices are right.

J. NEBEL & SON SUPPLY CO.,
High Hill, Montgomery Co., Mo.

BE PREPARED

Beekeepers, send for my 1925 bee supply catalog. Bargains in hives, supers, sections, smokers, swarm catchers, etc. Don't delay; send today.

CLARENCE ERDMAN,
Route 1, Berlin, Wisconsin.

Golden Queens and Banded Bees

Untested queens	-----	\$1.00 each
Tested queens	-----	1.50 each
Bees	-----	\$1.50 per lb.
Nucleus	-----	\$1.50 per frame

Bees inspected; free from disease.

J. W. SHERMAN
Valdosta, Ga.



"Diamond I" Honey Jars have been adopted as Standard by the American Honey Producers League

DISTRIBUTORS:

G. B. Lewis Company,
844 N. Front St.
Memphis, Tenn.
G. B. Lewis Company,
Watertown, Wisconsin.
G. B. Lewis Company,
415 S. St. Francis St.,
Wichita, Kansas.
Texas Honey Producers' Ass'n,
San Antonio, Texas.

Colorado Honey Producers' Ass'n,
Denver, Colorado.
Dadant & Sons, Hamilton, Ill.
G. B. Lewis Company,
328 Broadway, Albany, New York.
G. B. Lewis Company,
408 Twelfth St., Lynchburg, Virginia.
A. G. Woodman Co.,
Scribner Ave., & Blumrich St.,
Grand Rapids, Mich.

Illinois Glass Company

Established 1873

ALTON, ILLINOIS

High Grade Italian Bees and Queens

During the last five years I have been employed by different queen and bee shippers over the South and am now offering, for the first time from my own apiaries, high grade Italian queens and package bees. Prices as follows:

QUEENS				
	1-11	12-24	25-100	100 or more
Untested	\$1.00	\$.85	\$.75	\$.70
Select untested	1.20	.95	.85	.80
Tested	2.00	1.75		
Select tested	2.50	2.25		

Three Banded Italian Bees in Combless Packages, without Queens.

ADD PRICE OF QUEEN WANTED

1-lb. Package, each \$2.00; 10 or more \$1.80
2-lb. Package, each \$3.25; 10 or more \$3.10
3-lb. Package, each \$4.75; 10 or more \$4.50

Health certificate with each shipment. Pure mating, safe arrival and satisfaction guaranteed.

JNO. C. HOGG, Ramer, Alabama

max the afternoon of the last day, when Prof. Dummier, of the Washington State College, spoke upon the "Possibilities of Organizing a Marketing Association in the Yakima Valley." As a result of his talk a committee was appointed to look into the possibility and advisability of organizing. The territory to be included extends from Ellensburg to Pasco, comprising all of the large producing sections east of the mountains. Mr. G. W. York editor of Bees and Honey, who needs no introduction to the beekeeping fraternity, was elected president for the ensuing year. Mr. C. W. Higgins, of Wapato, was elected vice president, and Miss Helen Steiner, of Seattle, secretary-treasurer. B. A. Slocum.

OBITUARY

W. L. Hugh

Mr. William Hugh passed away at his home in Cloverdale, B. C., on November 15, 1924, after a protracted illness of some two years.

He was 60 years of age, of Welsh ancestry; had lived in Canada nearly forty years, had been interested in entomology for a great number of years, having been secretary of the British Columbia Entomological Society. He organized and was for some years active secretary and president of the Beekeepers' Association of British Columbia and at the time of his death was Honorary President. He carried on a vigorous fight for more up-to-date methods in the control of brood diseases in British Columbia. He was a Fellow of the Entomological Society (London, Eng.) and more recently a member of the Antiquarian Society of Wales.

He was always interested in bees, although never making it a means of livelihood, having sufficient of this world's goods to live upon for the last few years. He was an ardent microscopist and was often consulted by beekeepers in the diagnoses of brood diseases in British Columbia. He delivered many lectures before beekeepers and others of this province and conducted the first beekeeping class for returned soldiers in Canada at the University of British Columbia, being invited by the Governors of the University to conduct this work.

Shipment of Live Bees To Canada

Shippers should keep the Canadian regulations in mind. They are as follows:

1. Bees and queens come into Canada, duty free.

2. They must be shipped in combless packages, as bees on comb are prohibited entry.

3. Combless packages must be accompanied by a declaration signed by the shipper that the food supplied to the bees and carried in the packages is free from disease.

"Combless packages," says the Dominion Apiarist, "can be shipped safely to any point in Canada, and they will give equally as good results as bees on comb. Therefore no difficulty should be experienced in complying with the regulations."



MANUFACTURERS OF
"BLOSSOM-SWEET"
 AND
BADGER BRAND
 5 and 10 lb. Honey Pails.

We specialize in 5 and 10 lb. round pails and 60 lb. square cans. Plain and Lithographed cans of all descriptions.

WILKE-SBARRE CAN CO.
 ESTABLISHED 1856
 WILKE-SBARRE, PENNA.

Thriftiness

is the quality that makes Forehand's Three Bands surpassed by none but superior to many.

THRIFTINESS is the result of 33 years' work and study among the bees.

THRIFTINESS is the quality that will help you increase 1925 profits.

Today our thrifty bees are pleasing hundreds of America's best beekeepers.

Thrifty bees are guaranteed to please you.

We can supply you with package bees by express or parcel post, and all grades of queens.

Let us mail you a copy of our latest folder, "A Message for You."

W. J. Forehand & Sons
 Fort Deposit, Ala.

EARLY 1925 QUEENS

Send Your Order Now

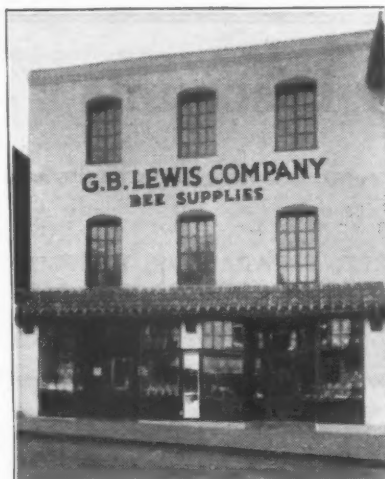
Untested, \$1 each, \$95 per 100.
 Tested \$2 each. Extra select tested \$3

I can send you nice bright queens

Packages and nuclei priced on request.

D. W. HOWELL
 Shellman, Ga.

Member Southern Q. & B. Assn.



Lewis Beeware Dadant's Foundation

In Lynchburg, Virginia ready for shipment

At the left is an illustration of the branch office and warehouse in charge of our own manager, whose single job is to give your orders and correspondence immediate shipment or answer. Mr. Hiatt is a Virginian, well acquainted with southeastern conditions. Ask him for a free copy of "How to Produce Honey."

G. B. LEWIS COMPANY
 408 12th St., Lynchburg, Va.

Leather Colored Italian Bees and Queens ROOT AND MOORE STRAIN

100 Queens at _____ \$.75 each 25 Queens at _____ \$.90 each
 50 Queens at _____ \$.80 each Less Queens at _____ 1.00 each

Packages \$2.50 per 2 pounds

Delivery after March 1st. Satisfaction guaranteed.

ROY C. PATTEN
 King's Lane, Whittier, Calif.

Profit to You

ACTUAL PROFIT to you is the only basis on which I approach you. My shipping point is A1, and my shipments reach you in best possible condition.

PACKAGE BEES from healthy stock.

LAYING QUEENS from best breeders obtainable, Italian and Carniolan.

I make my money on volume of business done and not on price.

Write for booklet and prices.

M. G. WARD, Lathrop, Calif.

BEE SUPPLIES

We manufacture STANDARD Hives, Hoffman Self-spacing Frames, Shipping Cases and THE NORTH STAR WINTER CASE.

ALL FIRST QUALITY GOODS. SPECIAL EARLY ORDER DISCOUNTS.

Write today for your copy of our Free Catalog and Price List.

SCHMIDT BEE SUPPLY CO.
 1420-22 HAGER AVE., ST. PAUL, MINNESOTA

Early Order Discounts

EVERYONE, including the beekeeper, is looking for a way to save money—this is one of them.

SECTIONS, SECTION HOLDERS, SEPARATORS, HOFFMAN BROOD FRAMES—ALL AT LIBERAL DISCOUNTS. Write in for quotations on the supplies you need for the 1925 season.

Orders forwarded immediately on receipt. Newly manufactured stock on hand with more in process.

CHARLES MONDENG

146 Newton Ave. N. and 159 Cedar Lake Road

MINNEAPOLIS, MINN.

DITTMER COMB FOUNDATION

If you want nice yellow foundation made of pure beeswax and without the use of acids and adulterants of any kind, try Dittmer's. It will stand the extreme test required of Pure Wax.

We make a Specialty of working your wax for Cash.

Write us for samples and prices.

A full line of supplies and the Best Sections and Hives made in Wisconsin, at lowest prices and in any quantity.

GUS DITTMER COMPANY, Augusta, Wisconsin

20,000 Citronelle Queens

BRIGHT ITALIAN BEES AND QUEENS

We are prepared to produce more than twenty thousand queens the coming season. We reared and sold more than 12,000 last season and returned many orders because we were unable to fill them.

Let us book your order now; only 10 per cent deposit required, balance before shipment.

Untested queens—\$1.00 each, 12 for \$10.00 or 100 for \$75.00.

Select untested queens—\$1.20 each, 12 for \$11.00 or 100 for \$85.00.

Package Bees with Untested Queens:

2-lb. package, \$4.20 each; 10 or more, \$4 each; 3-lb. package, \$5.50 each; 10 or more, \$5.00 each.

Satisfaction and Prompt Service Guaranteed.

The Citronelle Apiaries, Citronelle, Alabama

BEEKEEPERS WE MANUFACTURE DOVETAILED HIVES, HOFFMAN FRAMES, SECTIONS AND SHIPPING CASES

Our hives are made of best grade White Pine, cut accurate and smooth to standard measure. Sections are made of Basswood, polished on both sides. There are no better made.

We carry a complete line of everything in the apiary. Our shipping facilities are as good as can be found anywhere. We want your business. We guarantee prompt and satisfactory service. Price list free.

MARSHFIELD MANUFACTURING COMPANY, Marshfield, Wis.

Achord Bees and Queens for 1925

Shipments start April 20th. Order now to secure early shipping dates. Pure three-banded Italians only.

2-lb. package with select young laying queen	\$4.75
Five 2-lb. packages	22.50
Twenty-five 2-lb. packages	112.50
3-lb. package with select young laying queen	5.75
Five 3-lb. packages	27.50
Twenty-five 3-lb. packages	137.50

Express charges collect at destination. Safe arrival guaranteed. Inspection certificate and all necessary papers to carry packages through without delay. If packages are wanted by parcel post add 15c and postage to the price of each. We will advise you cost of postage to your P. O. If wanted without the queens, deduct \$1.00 from the price of each package.

QUEENS

Select young laying queens \$1.00 each, any number. Tested queens \$1.75 each, any number.

Terms 20 per cent with order, balance a few days before shipment. No bees sent C. O. D. Producing and shipping package bees and queens has been our sole business for many years. We have passed the costly and dangerous experimental stage. Your order placed here brings highest value for the money invested. For complete information send for latest price list.

W. D. ACHORD, Fitzpatrick, Ala.

MONTANA & NORTHWEST

Lewis "Beeware," Dadant's Wired Foundation, Woodman Smokers. Cans and Glass Honey Containers. Write for Catalog. Service. Quality.

B. F. SMITH, JR.,
Fromberg, Mont.

GOLDEN QUEENS

Untested, \$1.00 each, or six for \$5.00; 100 untested queens, \$75.00. Tested queens, \$2.00 each.

I guarantee safe arrival, satisfaction, and ship nothing but the best.

G. A. Taylor
Lock Box, Luverne, Ala.



CARNIOLANS

winter extra well. The past winter has been a severe one. Good wintering is essential to get colonies in condition for an early honey flow. Besides, Carniolans are very gentle, very prolific, build up rapidly during the spring and do not swarm excessively if intelligently managed. Ask for my Free paper "MERITS OF THE CARNIOLAN BEE," describing Carniolans more fully and giving helpful suggestions on managing these bees for comb and extracted honey. Later we can supply queens and a limited number of nuclei and packages of Carniolans. Have been selecting and breeding Carniolans for 13 years. Will rear ITALIAN queens in a separate yard 12 miles from Carniolans—C. B. Hamilton strain.

ALBERT G. HANN
GLEN GARDNER, NEW JERSEY

PACKAGE BEES FOR 1925

What will be your requirements in the spring? If you do not know exactly until you have ascertained your winter losses, why not estimate as nearly as possible and place your order now, so that your order will have first consideration in the spring? We will be prepared to ship several thousand packages on rush orders, but it will be impossible to supply all if the demand is too great. If your shipments are delayed it spoils the value of your purchase, so help us to avoid this by ordering now and be sure that you will get this many on time; if you wish to increase your order we will do our best to supply any additional you might want. Write us what your requirements are for this season and let us tell you what we can do toward supplying you your wants, whether it be one or one thousand packages.

Our prices of SUPERIOR Italian Bees and Queens.

	One	Ten		One	Ten
Two-pound packages, with queens	\$4.50	\$4.00	Three-pound packages	\$5.50	\$5.00
43 colonies purchased from us produced 20,000 in a single season.					

DURABLE CYPRESS SUPPLIES:

100 Cypress Hive Bodies with Frames	\$110.00	1000 White Pine Hoffman Frames	\$45.00
100 Shallow Extracting Supers, with Frames	70.00	1000 Shallow Extracting Frames	32.00

THE STOVER APIARIES, MAYHEW, MISS.



ITALIAN QUEENS

GOLDEN QUEENS

CARNIOLAN QUEENS

All our queens are young and prolific

We have for years been shipping tons of bees to all parts of the United States and Canada. Now is the time to book orders for next spring.

Send for our revised price list, and FREE BOOK, entitled "SUCCESS WITH PACKAGE BEES." It is interesting and instructive.

AULT BEE CO. 513 HOUSTON BLDG. SAN ANTONIO, TEXAS



PACKAGES QUEENS NUCLEI

We have shipped bees in packages and nuclei for years with the very best of success. Hundreds of packages have been shipped without the loss of a package. This means something. You pay for live bees and you want live bees. This is what we ship you. We never had disease, and health certificate is sent with every shipment. All shipments go by express, and safe arrival guaranteed.

Prices for April and May deliveries—Three banded Italians:

Two-pound package or two-frame nuclei with queen, \$4.50 each; 10 to 25, \$4.00 each; 25 or more \$3.75 each.

Three-pound package or three-frame nuclei with queen, \$5.50 each; 10 to 25, \$5.00 each; 25 or more, \$4.75 each.

Circular sent upon request.

COTTON BELT APIARIES, Roxton, Texas

Light Three Banded Bees and Queens for Spring Delivery

In reading this advertisement you should remember that this is our 15th year in the package and queen business, and you are taking no chance by ordering your wants from us. We intend making beekeeping a lifetime business. Our aim is to make new customers and to better our business.

All bees are shipped on a standard frame natural food for bees in transit. Will start shipping April 15th, depending on weather conditions. Ten per cent with order, balance at shipping time.

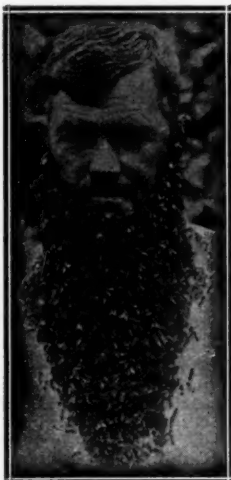
In order to give you such low prices and service we are unable to sell less than 10 packages.

10 2-lb. with selected untested queens	\$ 37.50	50 3-lb. with selected untested queens	212.50
25 2-lb. with selected untested queens	90.00	100 3-lb. with selected untested queens	400.00
50 2-lb. with selected untested queens	175.00	10 4-lb. with selected untested queens	52.50
100 2-lb. with selected untested queens	325.00	25 4-lb. with selected untested queens	127.50
10 3-lb. with selected untested queens	45.00	50 4-lb. with selected untested queens	250.00
25 3-lb. with selected untested queens	108.75	100 4-lb. with selected untested queens	475.00

5-lb. swarm with queen and 2 frames, \$6.50 each package.

All bees go out with Government health certificate to insure freedom of bee disease. Safe delivery guaranteed. See our classified adv. for breeding queens.

Central Louisiana Apiaries. Oscar Mayeux, Prop. Hamburg, Louisiana



"Our Bees are Gentle"

OUR
Twenty-Fifth Year
AT
BEEKEEPING

is now beginning. We believe you will like our queens and find them just what you want for building up your colonies for this summer's flow. Let us send you our

Twenty-fifth Anniversary Catalog.

It contains much that may interest you, and some things we hope will help you, whether you are a beginner or a beekeeper of experience. A card will bring it.

JAY SMITH

Route 3, Vincennes, Indiana.



**Lewis Beeware
Dadant's Foundation**

In Wichita, Kansas, ready to
fill your needs

Illustration shows the big office and warehouse across from the Santa Fe freight depot, filled with a big stock. Mr. Ebert, manager, is to give his entire time to filling your orders promptly and answering your correspondence. Wichita is better prepared than ever to serve beekeepers of the great Southwest. Ask him for a free copy of "How to Produce Honey."

G. B. Lewis Company 415 SOUTH ST. FRANCIS STREET
WICHITA, KANSAS

SEASON 1925

Pacific Citrus Honey Company

Office 221 Chancery Building, 564 Market St., San Francisco, Calif.

PRICES—QUEENS

Three Banded Italians

1—Mated, untested, \$1.00; 6 for \$5.00; over 12, 70c each.

PACKAGE BEES

In 2-pound packages.

1 to 10 -----at \$2.50-----with queens at \$3.50
10 to 100-----at \$2.00-----with queens at \$2.50

Large orders will be given special quotation.

Terms cash—10 per cent with order, balance before shipment.



**Better Way
to Garden**

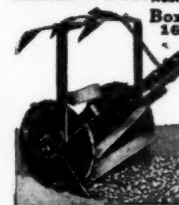
You can now have the finest garden possible, without the slow, back-breaking work. Weeds must be kept out and the surface broken up to retain the moisture. This marvelous machine makes it easy and quick.

BARKER Weeder, Mulcher, and Cultivator

Simply push a BARKER along the rows (like a lawn mower). 8 blades revolving against underground knife destroy the weeds and in same operation chop up the clods and turn the surface crust into a level, porous mulch; also aerate soil. "Best Weed Killer Ever Used." Guards protect leaves. Has shovels for deeper cultivation. A boy can run it and do more and better work than 10 men with hoes. Used by thousands market gardeners, experiment stations, farm and town gardeners. Inexpensive.

FREE BOOK tells how to get best garden results; eliminate hard work. Illustrates and describes Barker; gives prices delivered, etc. A card brings it.

BARKER MFG. CO. David City
Nebraska



Box
16

Write
for this
Free Book



We carry a full line of supplies that are needed in a modern apiary. The best that money can buy. Give us an opportunity to quote you our prices before placing your spring orders. Orders shipped same day received.

Parker Hardware Company

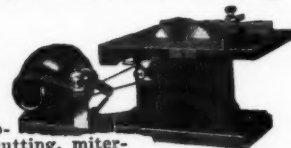
Little Rock, Arkansas

Distributors

G. B. Lewis Beeware and
Dadant Foundation

It's Easy to Build Things

with a
**BOICE-
CRANE
HANDISAW**



Does your ripping, cross-cutting, mitering, grooving, rabbeting, tenoning, sanding, grinding, and many other operations with ease and accuracy. Made in three sizes to meet every requirement. Saws 2 1/2-inch stock. Dados 5/8 x 5/8-inch. Machine built entirely of metal. May be driven by 1/4 h. p. 32-volt D. C. motor. Portable. Attaches to any light socket.

Write for descriptive circular on Boice-Crane Handisaws, Bench Band Saws, Drills and Jointers.

W. & J. BOICE, Dept. J. 3A, Toledo, Ohio.

THE BEST PLACE TO BUY PACKAGE BEES

Is where reliability, best quality, prompt service and square dealings are the essential principles, and where guarantees are worth something

The above is the foundation of my business and shall be maintained. To those who have not heretofore been satisfied with their purchases of package bees, I invite the most rigid investigation of my business and business methods. I guarantee to satisfy you, else will promptly refund your money. Frequently, letters are received like this: "Your price is a little higher, but am sending you the order as I am assured of having my bees arrive on time."

DELIVERED PRICES TO JUNE 1st, EITHER BY PARCEL POST, POSTPAID, OR PREPAID EXPRESS

1-lb. package, including select untested queen.....\$3.50 10 or more packages, either size, 25c per package less.
2-lb. package, including select untested queen.....5.25 If queenless packages are desired, for strengthening weak colonies, deduct \$1.25 per package.
3-lb. package, including select untested queen.....6.25

THREE-BANDED LEATHER COLORED ITALIAN QUEENS

1 select (one grade) untested queen.....\$ 1.25 10 select (one grade) untested queens..... 10.00
5 select (one grade) untested queens..... 5.50 Select tested queens, each 2.00

Safe arrival of bees and queens, pure mating, and perfect satisfaction guaranteed. Furthermore, I make good my guarantee. Ten per cent cash to book an order, balance just before shipping. Will ship on the day you name, having the bees, men and equipment to handle orders promptly. Should you find a queenless colony this spring send to me for a young queen to save them. I will not disappoint you. Health certificate will accompany each shipment. A trial order will convince you I have the highest quality of bees and queens.

JASPER KNIGHT, HAYNEVILLE, ALABAMA

Root Quality Bees and Queens

Root Bees are Honey Getters and Root Queens are Prolific, Vigorous, Hardy

Prices, April 15 to October 15:

Quantity.	1 to 9	10 to 24	25 to 49	50 to 99	100 or over
Untested	\$1.50 each	\$1.35 each	\$1.25 each	\$1.10 each	\$1.00 each
Select Untested	2.00 each	1.80 each	1.70 each	1.55 each	1.45 each
Tested	2.50 each	2.25 each	2.10 each	2.00 each	1.85 each
Select Tested	3.00 each	2.70 each	2.55 each	2.40 each	2.25 each
2-lb. packages of bees, without queen.....	\$5.00 each		1 to 9 pkgs. 10 to 24 pkgs.	\$4.50 each	25 or more \$4.00 each

Prices F. O. B. Shipping Point.

NOTE: Early spring delivery on package bees from southern yards, beginning May 20. Orders can be filled from Medina.

THE A. I. ROOT COMPANY, MEDINA, OHIO

West Side Station

You can have cash for your wax and old combs or cappings at the market price, or we allow a little more in exchange for supplies

Write for our terms and prices

"falcon" Supplies, Queens, Foundation

Booklet, "Simplified Beekeeping for Beginners" free

Write for catalog

W. T. FALCONER MFG. COMPANY, Falconer, (NEAR JAMESTOWN) N. Y., U. S. A.

"Where the BEST Beehives come from"

PACKAGE BEES

WITH OR WITHOUT QUEENS. NO DISEASE. 1,500 COLONIES TO DRAW FROM

Write for Price List

STERNENBERG BROS. LOCKHART, TEXAS

INCREASE YOUR PROFITS
by buying

BEE SUPPLIES

That are made to Satisfy

AT RIGHT PRICES

We manufacture hives, frames, sections and shipping cases and will save you money on your supplies.

Send us a list of your requirements and let us quote you prices.

Try RUSCH for HIGHEST QUALITY, RIGHT PRICES and REAL SERVICE.

Write for our new 1925 catalog.

A. H. RUSCH & SON CO., Reedsville, Wisconsin

The Alcohol-Formalin Solution

Has stood the severest tests throughout the past four years. It has passed tests where water-formalin solutions and other water solutions have frequently failed.

Comparative tests in my own apiaries have shown that water disinfectants frequently give rise to recurrences of American foul-brood.

Save your infected combs by disinfecting with the

HUTZELMAN SOLUTION

Patented October 14, 1924

For full information ask your dealer or write to

J. C. Hutzelman, Glendale, Ohio

Better Service for the Buyer of Bee Supplies

is one of the principal aims of our business. We believe, therefore, that our greatest usefulness lies in supplying WHAT you need, WHEN you need it.

We are manufacturers and distributors of just a little better bee supplies, just a little higher grade SECTIONS, Bee Hives and Frames, in fact, everything the beekeeper needs.

Write for our free illustrated catalog and price list today.

August Lotz Company, Boyd, Wis.

My excellent three-banded Italian queens are bred for honey production. They are gentle and hardy. Reared from the best mothers obtainable. I will have 1,000 mating nuclei in operation by May first. Safe arrival and satisfaction guaranteed. Queens, untested, \$1.00 each, 12 for \$10.00, 25 or more 80c each. One tested, \$1.50 each, 12 for \$16. Breeders, \$5.00.

JUL. BUEGELER,
Alice, Texas.

FORDS Start Easy at Zero Nearly double mileage 50% More Power

The AIR-FRICTION is the ONLY Carburetor which changes ordinary gasoline into powerful, super-heated DRY GAS VAPOR which burns up clean, prevents carbon and nearly doubles power and mileage. Leaves no unburned gasoline to run down into crankcase, destroy lubrication and grind out bearings. Motors live two or three times as long with Air Friction. Fords guaranteed to make 34 miles to gallon. Other cars in proportion. Try Air Friction 30 days at our risk. Money back if you want it. Agents wanted. Write today. AIR-FRICTION CARBURETOR CO. Dept. C-117 Raymond Bldg Dayton, Ohio

Booking Orders for May Delivery 1925

My introduced-laying-enroute queens and packages. One good, vigorous young queen, one standard Hoffman frame of emerging brood and adhering bees, and one additional pound of bees. Price complete, f. o. b. Bordeloville, \$5.00.

Additional frames of brood, or additional pounds of field bees to make larger package, \$1.00 each, respectively, in above packages. Bees and queens, Italians. Special discounts given to schools, colleges and church organizations. Queen introduced and laying enroute to you. Health certificate attached. Safe arrival and satisfaction guaranteed. One-fifth cash books order. Send for circular and names of satisfied customers in your state. Complete references given.

One yard of 100 colonies for sale.

JES DALTON,
Bordeloville, Louisiana.

CARNIOLAN AND CAUCASIAN QUEENS, ALSO THREE-BAND ITALIANS.

We are booking orders for the season of 1925 and respectfully solicit your patronage. Get our prices before placing your order. We offer Carniolans from imported Ambrozic and Kofler strains as well as our own selected stock. Caucasians bred from newly imported stock and from the famous Quinn American bred strain. There is none better.

Package Bees.—We are prepared to supply you with package bees for the season. You will find our prices in line with those of others. Let us know your wants and we will be pleased to quote you prices. Our 1925 circular and price list is free upon application. Write for it today.

W. A. HOLMBERG, Rt. 2, Turlock, Calif.

Grey and Yellow Bees

I am prepared to supply the honey producers of America Grey Caucasian or Yellow Caucasian and Italian stocks of bees. If it is early breeding comb builders and honey gatherers you want, I have the stock. Prices as follows: 3-frame nuclei with queen, \$6.00. Tested queens, \$2.00. Untested, \$1.50.

WILDER'S CYPRESS HIVES

Will give you satisfaction in point of service and prices to suit you. Write for catalog.

DIXIE BEEKEEPER

Published monthly. Full of practical information and news. Sample copy free.

J. J. WILDER, Waycross, Ga.

Tons of Package Bees

Shipment starts April 10; 20 per cent books your order, balance a few days before shipment. No bees or queens sent C. O. D., parcel post or on credit; will not book more orders than I can fill. Shipment made as near date set as weather will permit.

1 to 10, 2-lb. packages bees-----\$3.25 each; 3-lb. packages bees-----\$4.25 each
 10 to 25, 2-lb. packages bees-----\$3.00 each; 3-lb. packages bees-----\$4.00 each
 25 and up, 2-lb. packages bees-----\$2.75 each; 3-lb. packages bees-----\$3.75 each
 To above prices add price of queen wanted to each package.

Untested queens-----1, \$1.25; 6, \$6.50; 12, \$12.00; 50, \$45.00; 100, \$80.00
 Select untested queens, 1, \$1.50; 6, \$8.00; 12, \$15.00; 50, \$50.00; 100, \$90.00
 Tested queens, \$2.00 each; select tested, \$3.00 each.

W. O. VICTOR, Uvalde, Texas

Root Service from Chicago

When you get *Root Quality Bee Supplies* from the greatest shipping center in America, you get *satisfaction*. You get a superior grade of goods in *quality* and *workmanship*. Twenty-seven railroads mean quickest service for you. Write for our new 1925 catalog. Let us quote you on your wants.

A. I. ROOT COMPANY OF CHICAGO

224-230 WEST HURON STREET, CHICAGO, ILL.

Queens Queens Queens Queens

Mr. Beekeeper, if you buy for satisfaction, try these queens. Ask your beekeeping friends. I positively guarantee that every queen I ship will reach you safely and give perfect satisfaction, or your money will be cheerfully refunded. After you receive the queens, if they don't please you all you have to do is return them, and your money will be returned. Three-banded Italians only.

Prices:

	1	6	12	100
Untested -----	\$.95	\$5.40	\$10.20	\$77.50
Select untested -----	1.00	5.70	10.80	82.50

THE FARMER APIARIES, Ramer, Alabama

COX'S GOLDENS

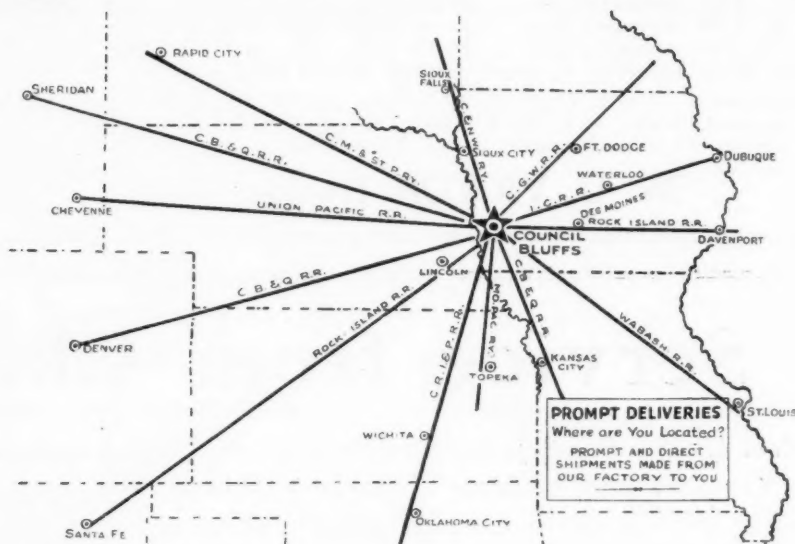
Eighteen years of breeding and shipping nothing but the best. So place your order early, especially for nuclei and packages.

One 3-frame nuclei with untested queen, \$6.50; 10 nuclei or more, \$6.00 each. Two-pound packages, each with untested queen, \$4.50; 3 pounds of bees with untested queen, \$6.00; one pound of bees with queen, \$3.00. Untested queen, \$1.00 each. For larger quantities write for prices. I do not pay charges. If packages are wanted by parcels post, send 25c per pound. Satisfaction is my motto.

(Telegraph Luverne, Ala.)

R. O. COX, RUTLEDGE, ALA.

"Right Now" Service



IT is the job of these Root Distributors to see that your order is filled correctly and completely, that every possible minute is saved in making shipments and that your orders are routed to come to you over the shortest possible route, at least possible expense.

That is a big job too. Every one is ready, however, with a full stock of Root Guaranteed Quality Goods, Airco Foundation and Three-Ply Foundation, so you may be sure there will be no delays in filling orders.

These distributors are ready to serve you in this way. That's what is meant when Western Producers are promised "Right Now" Service. Deliveries that are "Right," and "Now."

WERTZ SEED COMPANY,
Sioux City, Iowa.

ORIN STANLEY,
Lamoni, Iowa.

J. W. HARE,
Mason City, Iowa.

GRISWOLD SEED COMPANY,
Lincoln, Nebraska.

CARHART LUMBER COMPANY,
Wayne, Nebraska.

FOLSLAND BROTHERS,
Oldham, So. Dak.

P. J. POOLEY,
Mitchell, So. Dak.

RAPID CITY IMPLEMENT CO.,
Rapid City, So. Dak.

FOSTER HONEY & MERC. CO.,
Boulder, Colorado.

CHAS. KASTNING,
Pueblo, Colorado.

A. V. SMALL,
Augusta, Kansas.

PRICE BONDURANT,
Great Bend, Kansas.

HERSCHEL SHORT,
Altoona, Kansas.

SPRINGFIELD SEED COMPANY,
Springfield, Missouri.

JOHN NEBEL & SON,
High Hill, Missouri.

LONG PURE FOOD PRODUCTS CO.,
Kansas City, Missouri.

LODGE GRASS APIARIES,
Lodge Grass, Montana.

STILES BEE SUPPLY COMPANY,
Stillwater, Oklahoma.

The A. I. Root Company of Iowa

Council Bluffs, Iowa

Crop and Market Report

Compiled by M. G. Dadant.

Amount of honey left on hand in the East, the entire South, Central West, Plains States and Pacific States, is nominal only, indicating that outside of a number of scattered localities the crop should be entirely disposed of before spring. What honey is left in these areas will be mostly in the hands of dealers rather than producers.

Colorado reports several cars of comb honey and Montana two cars. There are probably five or six cars of extracted in Colorado, three in Utah, three in Montana, several in Idaho and eight or more in Washington and Oregon. Some of this has been held by producers who have been expecting a price of 10 cents or better f. o. b. shipping point. Likely some of this will have to be held over as the active selling season is rapidly passing. All in all, there is probably more honey in the country than a year ago at the same time, but less, by far, than the ten-year average. Stocks held over will have little effect on the demand and price in the new crop year. California is still importing from the inter-mountain territory to supply local demands.

HONEY SALES

Honey sales are fair to slow, much slower than at this time in 1924, although there has been a tendency to a quickening of demand in the past three weeks. There seems to be an enigma in the comb-honey market which ordinarily should have consumed all stocks, long ago.

WEATHER CONDITIONS

Heavy snows over the entire north half of the country should bode well for spring condition of honey plants. Exceptions are southern Wisconsin parts of southern Minnesota and northern Iowa, and Missouri, which report drought that may be hard on the clovers.

New Mexico and Texas are extremely dry and plant

conditions anything but flattering unless rain comes soon. It is dry in southern California, dryer than a year ago. North California prospects are rosy.

In the southeast, the weather has been extremely favorable except for drought, which we understand has been recently broken.

WINTERING

Where bees went into winter quarters in normal condition and with sufficient protection, they should winter well.

The weather has been so cold, however, and its continuation so long that likely the loss among outdoor unprotected bees is apt to be heavy. This extreme cold has also tended to heavy consumption of stores, so that likely spring feeding will be necessary to avoid starvation.

Cellar wintered bees appear in good condition, the warm spell in February not lasting long enough to make the bees uneasy. Some few reports are coming in that poorly ventilated cellars have become too cold, through extreme temperatures, though this is uncommon.

Some parts of the southeast, notably the Virginias and Carolinas, report poor wintering. Southern California reports considerable starvation, though the winter has been cool and should have tended there to a minimum of use of stores.

All in all, conditions the country over seem highly favorable. Although it is too early to indicate what the prospect is going to be in the big honey shipping sections of California, Washington and inter-mountain, it seems from present indications that the southeast and the white clover sections should not be below a year ago, while reports would indicate much more favorable prospects.

Take Care of Your Bees

With spring near at hand, now is the time to prepare for the proper ventilation of your bees to assure the success of your honey production.

For six years, many apiaries in Texas and other states have achieved great success by the use of the Heim Bee Ventilator—not only has this ventilator increased the production from their bee colonies, but has also made beekeeping a pleasure.

The Heim Ventilator is built of selected, first quality cypress and rust-proof galvanized screening—assuring a life equal to the most durable bee hive.

For further information about the Heim Bee Ventilator, write for free booklet, "The Heim Way," Heim Bee Ventilator Co., Three Rivers, Texas.

100 Ventilators	-----	each, \$1.15
50 Ventilators	-----	each, \$1.20
25 Ventilators	-----	each, \$1.25
Single Ventilators	-----	each, \$1.50

HEIM BEE VENTILATOR CO.

THREE RIVERS, TEXAS

7 Reasons

1. More honey per colony.
2. Keeps honey comb from melting down into the hive.
3. Helps cure the honey.
4. Discourages bees from robbing each other.
5. Less swarming.
6. Provides a colony with a free circulation of air.
7. You can place your colony of bees in the hot sun.



Lewis Beeware Dadant's Foundation

In Sioux City, Iowa ready for prompt shipment

See the picture of the branch office and warehouse at the left in charge of Mr. Creger, an Iowa boy. Beside knowing west central state conditions, his first job is to give 24-hour service on your orders. Ask him for free copy of "How to Produce Honey."

G. B. LEWIS COMPANY

23 W. Third Street

Sioux City, Iowa

CLASSIFIED DEPARTMENT

Advertisements in this department will be inserted for 5 cents per word, with no discounts. No classified advertisements accepted for less than 35 cents. Count each initial or number as one word.

Copy for this department must reach us not later than the 15th of each month preceding date of issue. If intended for classified department it should be so stated when advertisement is sent.

As a measure of protection to our readers, we require references of all new advertisers. To save time, please send the name of your bank and other references with your copy.

BEES AND QUEENS

HONEY IN PAILS—

Atwater, Meridian, Idaho.

COMBLESS PACKAGE BEES shipped on sugar syrup; pure Italian stock with queen; 2-lb. package, one to ten, \$4.50; 3-lb. package, one to ten, \$5.50. Write for prices on larger size packages and nuclei. No disease, and safe arrival guaranteed; 20 per cent books orders. Reference gladly furnished.

John A. Williams,
Box 178, Oakdale Louisiana.

GOLDEN Italian Queens and Nuclei for 1925, the big, bright, hustling kind (the kind that gets the honey). Satisfied customers everywhere. Untested, \$1.00 each; 6, \$5.00; 12, \$10.00; \$75.00 per 100. Tested, \$1.50 each; two-frame nuclei with queen, \$4.50 each; 10 or more, \$4.00 each. Safe arrival guaranteed.

E. F. Day, Honoraville, Ala.

PACKAGE BEES, also queens. It will pay you to get our prices.

J. J. Scott, Crowville, La.

PROFIT TO YOU—Actual profit to you is the only basis on which I approach you. My shipping point is A-1, and my shipments reach you in best possible condition. Package bees from healthy stock. Laying queens from best breeders obtainable, Italian and Carniolan. I make my money on volume of business done and not on price. Write for booklet and prices.

M. G. Ward, Lathrop, Calif.

BEES AND QUEENS—Two-lb. packages of Italian bees with untested Italian queen, \$4.00; 10 or more packages, \$3.75 each. Three-lb. package of Italian bees with untested Italian queen, \$4.75; 10 or more packages, \$4.25 each. Two-lb. package hybrid bees with untested Italian queen, \$3.75; 10 or more packages, \$3.50 each. Three-lb. package hybrid bees with untested Italian queen, \$4.25; 10 or more packages, \$4.00 each. This last offer is a real saving to the purchaser, for in a few weeks the colony will Italianize. Ten per cent books your order. Safe delivery guaranteed. Order direct from this ad.

H. E. Graham,
P. O. Box 666, Cameron, Texas.

BRIGHT ITALIAN QUEENS—One, \$1.00; 6 for \$5.00 or 12 for \$10.00. Write for prices on large orders or package bees.

P. B. Skinner, Greenville, Ala.

GOLDEN ITALIAN QUEENS untested, about May first, \$1.00; 6 for \$5.40; 12 or more, 80c each; last fall's rearing, tested, \$1.50; select tested, \$2.50. No disease, good queens, safe arrival and satisfaction guaranteed.

D. T. Gaster,
Rt. 2, Randleman, N. C.

TRY Peterman's Queens. Bred from select breeders, raised in standard frame, strong nuclei, well laid up before caging and last and most important, I select out only the largest, thrifty layers to sell, killing all others. From experience, I know this pays. Am building a business on a square deal basis. Prices: 1, \$1.25; 6, \$7.00; 12, \$13.00; 25 at \$1.00 each; 100, 90c each.

H. Peterman, Lathrop, Calif.

THREE-BAND Italian bees and queens; 2-lb. package with untested queen, \$4.50; 1 untested queen, \$1.00; \$10.00 per dozen; 1 tested queen, \$1.50. My motto is quality. No disease; safe arrival and satisfaction guaranteed.

J. Allen Catherine, Ala.

QUALITY COUNTS—Try Pinard's queens and package bees. Booking orders now for spring delivery. Circular free. Yours for better bees.

A. J. Pinard, Morgan Hill, Calif.

TRY Peterman's queens for quality and a square deal. Circular free.

H. Peterman, Lathrop, Calif.

EDSON APIARIES are now booking orders for spring delivery of our renowned select untested queen bees at the following prices: One to fifty, \$1.25 each; fifty, \$57.50; 100, \$100. Prompt service and a guarantee embracing entire satisfaction of our stock.

Edson Apiaries, Gridley, Calif.

WARRANTED pure mated Italian queens will be ready to mail about May 15. No blacks or hybrids around here, so my Italians are sure to be mated with the best of drones. Queens, also, mailed in sure introducing cages.

Daniel Danielsen, Brush, Colo.

"BEAR'S BEST BEES"—One frame nucleus with one pound of bees and tested queen, \$5.00; two frame nucleus, \$6.00. Send for information regarding the very hardest strain of fine Italian bees.

Hiram H. Bear, Hinton, West Virginia.

SHE-SUITS-ME QUEENS—Three-banded \$2.00 each. After June 5, \$1.00 each. Send for Price list of queens, nuclei and package bees. Free with each initial order, one Safin cage.

Allen Latham,
Norwichtown, Conn.

PURE three-banded Italian queens at \$1.00 each or 6 for 5.00. One frame brood and 2 pounds of bees with queen, \$3.90; no disease. One-fourth cash with order, balance at shipping time.

C. G. Ellison, Belton, S. C.

BURLESON'S PACKAGE BEES—Shipped without combs or honey, fed while in transit on sugar syrup, and guaranteed to be no chance to contract disease of any kind. For prices, etc., write

T. W. Burleson, Waxahachie, Texas.

FOR SALE—Golden Italian Queens, untested \$1.00 each; 6 for \$5.40; 12 or more 80c each; tested \$1.50 each; select tested \$2.50 each. Apiary inspection and found no disease of any kind. Safe arrival and satisfaction guaranteed.

Sam Hinshaw,
Randleman, N. C.

FOR SALE—Golden queens, producing bees solid yellow to tip. Select untested, \$1.50; tested, \$2.00; select tested, \$2.50. Safe arrival and satisfaction guaranteed; pure mating and prompt shipment. Print your address.

H. G. Karns,
Victoria, Va.

OUR NEW 1925 circular and price list of our bees by the pound and queen bees is now ready. Let us mail you one.

M. C. Berry & Co.,
Box 697, Montgomery, Ala.

AM BOOKING ORDERS now for my famous gray Caucasian queens; ready April 15. Untested, one, \$1.50; dozen, \$15.00. Circular free. Bolling Bee Co., Bolling, Ala.

Zed Gafford, Prop.

SEE my display at., page 136.

Jes Dalton, Bordelonville, La.

FOR SALE—St. Romain quality bees, the pure three-banded Italian bees and queens at a very reasonable price. A 2-lb. package with queen, price \$3.00; a 3-lb. package, \$4.00; a 4-lb. package, price \$6.00. Orders are booked with 20 per cent down and balance 20 days before shipment. Deliveries to be made between May 15 and July 1, 1925. Some shipments can be made earlier if weather permits. Bees are shipped on a comb of emerging brood and enough honey for feed in transit. Bees are absolutely free from disease. I furnish health certificate with each shipment. I also guarantee safe delivery and satisfaction. Address to John St. Romain, Marksville, La.

IF YOU WANT good, bright Italian queens, by return mail, send your order to us. Queens, \$1.00 each; \$10.00 per dozen; one pound bees with queen, \$3.00; 2 pounds bees with queen, \$4.75. We pay charges.

Graydon Bros, Rt. 4, Greenville, Ala.

WE are offering 250 selected, tested queens for breeding purposes. These queens were reared early last summer and selected during the fall for breeding. As we do not recommend mailing breeding queens, we will ship these on a two-frame nuclei for \$6.50 each. So as to insure you a good queen, we will not ship these breeders before April 25c. See our display ad for package bees.

Central Louisiana Apiaries,

Oscar Mayeux, Proprietor, Hamburg, La.

I AM now booking orders for my leather-colored Italian queens and package bees. Write for prices.

W. O. Victor, Jr., Uvalde, Texas.

SUPERIOR ITALIAN BEES & QUEENS—

Get our delivered prices; ship on day you name; no disease; ship only the best, you to be pleased in every way or your money back. Ten per cent cash with order; service and quality guaranteed.

W. C. Smith & Co., Calhoun, Ala.

EARLY PACKAGE BEES & QUEENS that make a surplus the first season. Most northern breeder in California. See larger advt.

J. E. Wing, Chico, Calif.

TEN YEARS of experience in breeding queens of quality Golden, also gray Caucasian. Golden queens, one, \$1.25; dozen, \$11.50. Gray Caucasians, one, \$1.50; dozen, \$15.00. Pure mating. Safe arrival guaranteed in United States and Canada.

Tillery Bros., Rt. 5, Greenville, Ala.

PACKAGES with queen already introduced.

Buy your packages with queens introduced and avoid loss. Best pure mated Italian queens. Guaranteed. State inspected. No disease. Let our circular tell you about them and explain the advantages of our package bees and introduced queens.

A. O. Smith, Rt. 12, Mt. Vernon, Ind.

PACKAGE BEES and three-band Italian queens that please. Our twenty years experience here in selective breeding of queens and the shipping of bees are at your service. No disease in this section. For prices, references, etc., write

Allenville Apiaries,
Allenville, Marengo County, Ala.

MOTT'S northern bred Italian queens. Select untested, \$1.25; after June first, \$1.00 each. Select tested, \$2.00. List free.

E. E. Mott, Glenwood, Mich.

PACKAGE BEES—Circular free.

Van's Honey Farms, Hebron, Ind.

SEE our display advertisement on page 142.

Loveitt Honey Co.

BRIGHT Italian Queens for 1925.

J. F. Diemer, Liberty, Mo.

ITALIAN QUEENS—Write for price list.

C. B. Saunders' Apiaries, Merom, Ind.

GOLDEN THREE-BANDED and Carniolan queens. Tested, \$1.00; untested, 75c each. Bees in 1-pound package, \$1.50; 2 pounds, \$2.50; 3 pounds, \$3.25. Safe delivery guaranteed.

C. B. Bankston,
Box 65, Buffalo, Leon Co., Texas.

MERRILL'S QUEENS—\$1.00 each.

R. E. Merrill, Muncy, Pa.

HARDY ITALIAN QUEENS—\$1.00 each.

W. G. Lauver, Middletown, Pa.

FOR SALE

HONEY IN PAILS—

Atwater, Meridian, Idaho.

FOR SALE—Italian bees in 8 and 10-frame, well painted hives, \$6.00 and \$10.00. Also beekeepers' supplies.

H. S. Duby, St. Anne, Ill.

FOR SALE—40 colonies of bees and equipment; honey extractor, storage tank, uncapping can, queen excluders, bee escapes. No disease. Write for particulars.

W. J. Mertel, R. F. D. 2, Utica, Ill.

FOR SALE—At A. L. Harris, East Helena, Montana. 50 colonies bees, standard 10-frame dovetail hives, supers, extractor and fixtures.

GLADIOLI BULBS—Closing out. Bargain. Van Wyngarden Bros., Hebron, Ind.

FOR SALE—1 to 150 colonies in 10-frame hives; new and painted combs built from full sheets wired foundation. These colonies are headed with queens from the best breeders in the country. Health certificate furnished. Will ship any time buyer wishes. Bert Gander, Bayard, Iowa.

WILL sacrifice my bees and equipment (extracting outfit). No disease. Have also a lot of beekeeping literature. Must sell on account of changing my residence, due to Government work. Write for particulars. Louis A. Loboda, 1301 Fifth Ave., Milwaukee, Wis.

FOR SALE—At a bargain: 150 or more colonies of Italian bees located in Anamosa, Iowa. These bees are heavy with stores in new 10-frame hives; combs built from full sheets of foundation. For full information write. A. B. Marchant, Jesup, Ga.

FOR SALE—59 colonies, mostly Italian. In standard 10-frame hives, wired; only one year old; well painted. New Root two-frame extractor. Forced to sell, going west for health. Write for full particulars. L. E. Dye, Dothan, Ala.

BEAR'S Mountain Bred Bees.
Hinton, West Virginia.

FOR SALE—Twenty-five Italian colonies, modern hives; make offer; spring shipment. O. Biermann, Malcom, Iowa.

FOR SALE—Mixed white blossom annual and biennial sweet clover seed. Seed hulled and scarified; 5 lbs. to 25 lbs., 25c a pound, parcel post prepaid. Larger lots by express, prepaid, 20c a pound. M. C. Berry & Co., Box 697, Montgomery, Ala.

SEE our display advertisement on page 142.
Loveitt Honey Co.

FOR SALE—100 colonies bees in healthy condition. Write for prices. James Johnson, Pocahtontas, Ark.

FOR SALE—White and amber extracted honey. Write for prices. State quantity wanted. Dadant & Sons, Hamilton, Illinois.

HONEY AND BEESWAX

HONEY IN PAILS—
Atwater, Meridian, Idaho.

HONEY in 5 and 60-lb. tins.
Van's Honey Farms, Hebron, Ind.

FOR SALE—Comb, extracted and chunk honey. Prices on request. Samples 15c. F. W. Summerfield, Waterville, Ohio.

EXTRA FINE sweet clover honey. Write for prices. Sample 15c. Wm. Bigel, Barrington, Ill.

FOR SALE—Fine comb honey from white and sweet clover, quality guaranteed. F. M. Parsons, 4202 Cumming St., Omaha, Neb.

NO. 1 CLOVER HONEY in 60-lb. cans. Edw. Hassinger, Jr., Greenville, Wis.

FINE BAKING HONEY for sale. Henry Allen, Cozad, Neb.

OUR own crop, delicious Nebraska honey, thoroughly ripened. Six 10-pound pails, \$9.00. C. F. Strahan, Linwood, Neb.

BEAR'S Mountain Bred Bees.
Hinton, West Virginia.

BEESWAX WANTED—We need large quantities of beeswax and are paying good prices now. Ship to us at Hamilton, Ill., or Keokuk, Iowa, or drop us a card and we will quote f. o. b. here or your own station, as you may desire. Dadant & Sons, Hamilton, Ill.

FOR SALE—Honey in 60-lb. cans; sweet clover, basswood, white clover, and other flavors. Tell us what you want. Beekeepers who need more honey for their trade and solicitors should write us. A. I. Root Co., 230 West Huron St., Chicago, Ill.

WANTED—Car or less lots of extracted clover honey. Mail sample and quote lowest cash price. A. W. Smith, Birmingham, Mich.

DELICIOUS Nevada Honey.
C. E. Andrews, Fallon, Nevada.

HONEY FOR SALE—Any kind, any quantity. The John G. Paton Co., 217 Broadway, New York.

CLOVER EXTRACTED, in cases, 2-60's. Write for prices. C. S. Watts Monticello, Ill.

FOR SALE—Our own crop, clover honey; granulated. Price on request. Eber Vincent, Wellington, Ohio.

EXTRA FINE white extracted honey, white and alsike mixed. Case or ton lots. Clyde Wheeler, Oberlin, Ohio.

FOR SALE—Our own crop white clover and amber fall honey in barrels and cans; also white alfalfa in cans. State quantity wanted and we will quote prices. Samples on request. Dadant & Sons, Hamilton, Ill.

FOR SALE—White honey in 60-lb. cans; also Porto Rican in 50-gal. barrels. Samples and prices on request. A. I. Root Co., 16-18 Jay St, New York, N. Y.

FINE QUALITY clover honey. Prices upon request. State amount wanted. C. S. Engle 1827 23rd St., Sioux City, Ia.

FOR SALE—White and water white sweet clover honey; put up in 5-gallon cans. Strictly first-class in every way. Write for prices, stating quantity wanted. Dadant & Sons, Hamilton, Ill.

FOR SALE—Comb honey at reduced prices. State your wants. H. G. Quirin, Bellevue, Ohio.

SUPPLIES

BEAR'S Mountain Bred Bees.
Hinton, West Virginia.

FOR SALE—About 100 each of covers and bottomboards for 8-frame hives. Write for prices. F. E. Matzke, Juda, Wis.

FOUR new, 10-frame, metal cover, cypress, dovetailed, Jumbo hives: complete with hive stands, nailed and painted three coats. Eight new 10-frame 4x5 section supers, complete, nailed and painted three coats. Ten new 10-frame Root 4x5 section supers, complete, knock-down. One hundred closed end, shallow extracting frames, knock-down. Eight pounds Airco 3-ply Jumbo foundation. Two new, 10-frame ventilated bee escapes. One Root frame wiring device, slightly used. One Root swarm basket and pole, slightly used. No disease, and satisfaction guaranteed. The above lot for \$30.00. O. S. Ward Obion, Tenn.

FOR SALE—New and used comb honey supers, metal hive tops, hive bottoms, queen excluders. All for 10-frame hives. Hoffman brood frames, new. Boardman feeders. Wax foundations, 4x5 sections. Merton Church, Highland Park, Ill.

HERSHISER wax press, used once; Root steam uncapping knife, complete, new; 8-frame observation hive, 1½ story; 1-frame observation hive, 1½ story; both almost new. For sale cheap. W. E. Axtell, Blue Rapids, Kans.

"BEEWARE" and Dadant's Wired Foundation for the Northwest. Catalog prices. F. O. B. Fromberg, Montana. Beeswax wanted. Write for prices. B. F. Smith, Jr., Fromberg, Mont.

SOUTHWESTERN distributor for Robinson's comb foundation. Holloway Bros., Marietta, Okla.

FOR SALE—Good second-hand 60-lb. cans, two cans to a case, boxed. We have large stocks of these on hand. Please write for prices if interested. We are offering only good cans and good cases. C. H. W. Weber & Co., Cincinnati, O.

REXFORD' Push-in Comb Cage introduces queens safely. Sample cage from now until May first, sent for 25c. O. S. Rexford, Winsted, Conn.

ADAPTABLE BEEHIVES, single or double walled, are sound in principle and are practical. For free information address Geo. P. Wood, Peekskill, N. Y.

35 LIGHT FRAME comb-honey supers for sale. Used two seasons. Equipped with inside fixtures for 4¼x1¾ sections; \$20.00 takes the lot. L. A. Thrall, Anthon, Iowa.

ROBINSON'S COMB FOUNDATION will please the bees, and the price will please the beekeeper. Wax worked at lowest rates. E. S. Robinson, Mayville, N. Y.

FOR SALE—Good second-hand 60-lb. cans, 2 in a case, at 50c per case, f. o. b. Dewey, Okla. M. H. Hill, Dewey, Okla.

BEES FREE. Trap stray swarms. Circular free. Ed. Swenson, Spring Valley, Minn.

HAVE YOU any Bee Journals or bee books published previous to 1900 you wish to dispose of? If so send us a list. American Bee Journal, Hamilton, Ill.

WESTERN BEEKEEPERS—We can demonstrate that you can save money on buying bee supplies of best quality. Write for our latest price list. The Colorado Honey Producers' Association, Denver, Colo.

CONNECTICUT and Rhode Island headquarters for Root's Beekeepers' supplies. A. W. Yates, 3 Chapman St., Hartford, Conn.

MISCELLANEOUS

BEAR'S Mountain Bred Bees.
Hinton, West Virginia.

EXCHANGE—\$48.00 incubator for 12-32 double hammerless shotgun. Lorenzo Clarke, Winona, Minn.

FOR GOOD PRINTING—Reasonable. Appeldoorn, Hamler, Ohio.

GUMMED LABELS! Interesting samples free!!! Edward Harrison, "Perfection Printing," Baltimore.

MAKE queen introduction sure. One Safin cage by mail, 25c, 5 for \$1.00. Allen Latham, Norwichtown, Conn.

WE HAVE NOW ON HAND, from Paris, a number of copies of the excellent work of Perret-Maisonneuve, in French, entitled "L'Apiculture Intensive & L'Elevage des Reines." The first shipment was delayed over two months. The price of this very progressive work is \$1.50 by mail, prepaid. American Bee Journal, Hamilton, Ill.

WESTERN HONEY BEE, 428 S. Hewitt St., Los Angeles, Calif., published by Western beekeepers, where commercial honey production is farther advanced than in any other section of the world. \$1.00 per year. Send for sample copy.

GLEANINGS IN BEE CULTURE, published at Medina Ohio, is the most carefully edited bee journal in the world. Its editor-in-chief is Geo. S. Demuth. Its field editor is E. R. Root. Ask for sample copy.

THE DADANT SYSTEM IN ITALIAN—The "Dadant System of Beekeeping" is now published in Italian, "Il Sistema d'Apicoltura Dadant." Send orders to the American Bee Journal. Price \$1.00.

WANTED

HONEY IN PAILS—
Atwater, Meridian, Idaho.

WANTED—Man with experience to work several hundred colonies bees on shares. Mathilde Candler, Cassville, Wis.

WANTED—Two-frame extractor. Good condition. Osborn Evans, Ulen, Minn.

WANTED—Experienced and aggressive bee-man to operate apiary on salary and commission. Write fully, giving age, education, experience and wages desired.
R. Law, 131 Cedar St., New York City.

WANTED—Position—Refined young woman, good education desiring outdoor life for summer wishes room and board with intelligent Christian people keeping up-to-date apiary, poultry, sheep or fruit and vegetable farm. Anxious to assist and learn these agricultural pursuits.
Box S, care of American Bee Journal.

WANTED—25 to 30 1-lb. packages of young bees in April; blacks or hybrids will do; no queens or drones wanted.
Daniel Danielsen, Brush, Colo.

WANTED—Man to work with bees; year around job, if desired. State wages expected.
Wm. Bigel, Barrington, Ill.

WANTED—Second-hand Root-Hatch wax press.
Louis Kasch, Pecatonica, Ill.

WANTED—Two-frame reversible honey extractor for Hoffman frames, in good condition and cheap for cash.
Box 227, Greybull, Wyo.

WANTED—Experienced man to run out-yard. State experience and wages wanted in first letter.
J. F. Pithoud, Fromberg, Mont.

MAN of 37, having some experience with bees, wants position with beekeeper to learn thoroughly the business. Please state wages and particulars.
Otto Racine, Denison, Iowa.

WANTED—To buy, good, used honey extractor.
Leo Bentz, Neillsville, Wis.

HELP WANTED—Young unmarried man to handle about 100 colonies for both comb and extracted honey. Want man interested in greenhouse, flower gardening and landscaping. Prefer inexperienced help. Opportunity for permanent connection for the right man.
B. F. Kindig, East Lansing, Mich.

HONEY—Quote price and mail sample. Will trade package bees for honey.
Van's Honey Farms, Hebron, Ind.

HERE is a real opportunity. We have a first-class, ten-frame equipment for two hundred colonies; a splendid sweet clover location and sixteen years' experience in extracted honey. But we also have rheumatism we have struggled with six years. We want to incorporate and need a man who has had enough experience to know that he wants to make beekeeping his life work. We would like a man of some education and culture, and who is physically strong and possessed of ambition and vision enough to head a business of several hundred colonies. Full information about yourself will be appreciated.
C. E. Dustman, Ortonville, Minn.

WANTED—To employ a bright, industrious young man, desiring to learn queen breeding as well as general honey production. Many of the largest and most successful queen breeders and honey producers in the United States have made their start with us. We also have a splendid partnership opening for the right man in 1926. We furnish board and small wages.
M. C. Berry & Co.,
Box 697, Montgomery, Ala.

THE STAPLETON APIARIES COLQUITT, GA.

Attention Beekeepers

THE STAPLETON APIARIES COLQUITT, GA.

Last year I suffered a very heavy loss in a bank failure. In order to raise some ready money, I sold my bees at a great sacrifice during the past season. I succeeded in my purpose, having received orders for more bees than I could supply, but on footing up my business at the close of the season, I found that expenses just about balanced receipts, and in order to keep up the quality of bees and queens furnished, I am forced to raise prices slightly for another season. I quote the following prices for 1925 delivery:

1 2-lb. package with untested queen	\$ 4.25
10 2-lb. packages with untested queen	37.50
25 2-lb. packages with untested queen	90.00
50 2-lb. packages with untested queen	172.50
100 2-lb. packages with untested queen	320.00
2 and 3 frame nuclei at same prices as packages.	

I have been in the bee business for 15 years and have the best stock of 3-band Italian bees I have been able to purchase or breed. No disease in this section, and inspector advises me that Georgia is now entirely free of foulbrood. Certificate of State Inspector with each shipment. I guarantee safe delivery and will replace or refund on receipt of bad order report from the express agent. I do not recommend shipment by parcel post, as it is unsatisfactory. 96 per cent of all shipments made by me the past season went through in first-class condition.

1-3-lb. package with untested queen	\$ 5.25
10 3-lb. packages with untested queen	45.00
25 3-lb. packages with untested queen	108.75
50 3-lb. packages with untested queen	212.50
100 3-lb. packages with untested queen	400.00
Tested queens 50 cents extra.	

Shipment any time after April 15th, with 700 colonies from which to draw. I expect to need all of the early queens I can rear for packages and will not be in position to furnish queens alone until late in the season. I will not overbook and suggest that you place your orders early.

I have been local representative for R. G. Dun & Co. for nearly 20 years and refer to any bank or banker in this section of the state.

N. L. STAPLETON, COLQUITT, GA.

Confidence

Most of the old established firms are responsible and merit your confidence. Don't condemn the whole bunch of shippers because one failed you once. We are not playing a confidence game. Most of us have too much at stake for that. We could cite you to any number of local men as to our business responsibility, but you are fed up on that. But we want your confidence, then your order.

Laport, Indiana, Jan. 16th, 1925

"Jensen's Apiaries, Crawford, Miss.

"Dear Mr. Jensen: Please quote price on thirty 3-frame nuclei delivered May 29th. Also quote on queens in 100 lots.

"Your absolute honesty and the quality of your goods demand my keeping business connections with your yards. This is our sixth year of satisfactory relations, and hope there will be many more.

(The above order has been booked.)

"Yours truly,

Herbert J. Link."

QUEENS

Untested	\$1.00; \$10.00 per doz.; \$75.00 per 100
Select untested	20c each additional
Tested	\$2.00
Breeders	\$5.00

PACKAGES

2-lb. with untested queen introduced,	\$4.50; 10 up, \$4.00
3-lb. with untested queen introduced,	\$5.50; 10 up, \$5.00
Nuclei, same prices, respectively. No disease; Safe arrival guaranteed.	

JENSEN'S APIARIES, Crawford, Mississippi

We are offering a limited number of two-pound packages of first-class Italian three-band and leather-colored bees this season, and urge our customers to book their orders early.

One two-pound package of bees \$2.50 Queen, untested, young \$1.00
Circular on request.

LOVEITT HONEY CO. 602 N. 9TH AVENUE PHOENIX, ARIZ.

NEW BINGHAM BEE SMOKER

FATENTED

BIG SMOKE



BIG SMOKE—WITH SHIELD
FIRE POT, 4x10

NEW BINGHAM BEE SMOKER

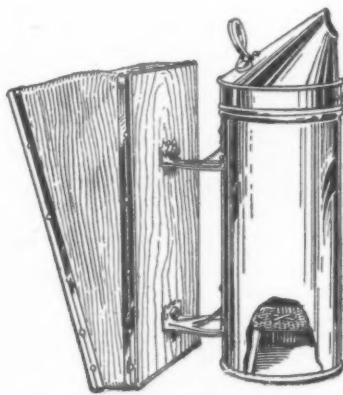


SMOKE ENGINE—FIRE POT 4x7

NEW BINGHAM BEE SMOKER



DOCTOR—FIRE POT 3½x7



CONQUEROR—FIRE POT 3x7



LITTLE WONDER
FIRE POT 3x5½



THE SMOKER YOU OUGHT TO OWN

THE most important invention in beekeeping, as little can be accomplished without the Bee Smoker.

The New Bingham Smoker is the most efficient and durable machine in the market.

The standard for over 40 years in this and many foreign countries, and is the all important tool of the most extensive honey producers of the world.

Comes with metal legs, metal binding and turned edges. The four larger sizes have hinged covers. The fire grate is of very substantial material, with an abundance of draft holes, the 4-inch size having 381 holes, equal to an opening 2 inches square.

A valve in the bellows of the larger sizes makes the Smoker respond to the most delicate touch.

The new Bingham comes in six sizes, including the Big Smoke, which is furnished both with and without shield. The large sizes are best, as they hold more fuel, give more smoke, require filling less often, and are especially recommended to those who work with their bees several hours at a time.

Write for our complete catalog of bee supplies and accessories. Special circular of all sizes of Bingham Smokers free for the asking.

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For sale by all G. B. Lewis Co. and Dadant & Sons agencies. Also sold by many others in this and foreign countries. Insist on the best—the Bingham Smoker.

Burr Combs

How I Became a Successful Beekeeper

By Glen V. Mills.

During the autumn of 1921, my wife and I attended the Oklahoma Free State Fair at Muskogee, and listened to the talk and watched the demonstration of the superintendent of the Apiary Department, Mr. Holekamp, of Webster Grove, Mo.

We each saw an opportunity for increased diversification on our little farm. Spring came and with the first flowers our ardor increased.

Jack Rowley, a local genial Irishman, who the summer before, had had a few colonies wished on him by a city resident who had been driven off his premises by these pesky black bees, accommodated me by giving me the pick of his yard for \$8. With the changing of the money from my pocket to Jack's he became a seeker after suckers to sell "swarms" and I started on the turbulent road of the amateur.

First Baptism of Fire

That night the "genial Jack" tacked a strip across the entrance. The next morning found me moving them to their new home in our back door-yard. One-half mile on my shoulder, six miles by street car and then another half mile to carry. It was on the street car that things began to happen. I attempted to give the bees air by opening the entrance just a little. I made the little a little too much, and out came the bees.

The motorman charged me a full fare for each, by count, then through pity offered to compromise by charging half fare. The passengers insisted that he ought not to charge me, as they were babes in arms. Everyone agreed that I was such a confounded fool that I was not to blame for what I did. During the interesting conversation the bees were also at work. Eventually, with swollen eyes looking over swollen cheeks, I succeeded in replacing the entrance cleat. This was my first baptism of fire.

Changes Supers

Everything was serene in the "Apiary" until the time to put on another super, number two under number one.

I was dressed in veiled hat, gloves, heavy coat and pants tied around my shoe tops. The hour was 12, noon. The mercury stood at 108. I was taking my Turkish bath, every thread in my garments was wet with sweat. I was proceeding to quickly change the supers—yes in an instant.

The bees gathered on the gloves and found a handy hole at each tail end. I hurried more and caught the veil on a twig, making an opening at the neck. The bees found that hole somehow and began to work on the

back of my neck. I snapped on the supers and began to run. The more I ran the more the bees stung; the more they stung, the more I ran—an endless chain. I would have been running yet, but the bees could sting but once, and the supply gave out. I came back to the sympathetic Artie Clare, much the worse for wear.

Quicker Than Quick

When the time came to put on super number three, I stole a march on those bees. I got up at 4 a. m. in the cool morning, and donned my armour and went forth to battle. I had my smoker lighted, but did not use it, because I knew I could change the supers before the bees could break their cluster on the combs. My quickness the first time was a snail pace. This time I was quicker than quick—so quick that I lifted supers two and one by the top one, the propolis broke and let bottom super fall about six inches.

In my efforts to regain the lost super my veil caught on another twig, another opening, another swarm of bees inside my veil. Again I fell back on my feet to win the day and take me away. I buried myself in a bridal wreath hedge. The only wedding march was from that angry hive of bees. My blinded eyes and dazed brain then led me to the blackberry patch, where I received my crown of thorns. The bees still came on. I went through corn shocks and trees and at last lost all the bees.

Again I went back to sympathetic Artie Clare, who repinned my protection so I could replace the supers.

As she watched me she said, "Glen, you sure have perseverance." Three times I had made a quick fool of myself and paid the penalty.

To this day, my friend, E. P. Trough the local bee-ware man, always introduces me to strangers as "Mills, the man quicker than the honeybee."

No bigger fool ever lived than I during this stage except the man who went out to "rob" his bees; they stung him, he poured coal oil over the hive and set it afire, burning up bees, hive and honey. I lift my hat to that guy, the Nero of beekeeping.

The time came around for another year's fair at Muskogee. Mr. Holekamp had passed away and J. F. Diemer, of Liberty, Mo., became superintendent of the Apiary Department.

There Are No Amateur Beekeepers

Artie Clare and myself both agreed that I should try and learn more about beekeeping. Mr. Diemer a beekeeper of national standing, caused her to give a supper to him as a guest of honor, a supper that no woman in Oklahoma could excel and few could equal. Mr. Friedman and Mr. Stiles, representing the "Bee-ware" and "Airco" supplies, were

also present at the board. Although these men talked shop, neither advised me to put bees into nail kegs or soap boxes. Strange, was it not? They both said start right with modern hives and interchangeable frames and Italian queens.

Mr. Diemer said there was no such animal as an amateur beekeeper. A man was either a professional or a failure. My ears burned, but the faithful Artie Clare came to my rescue. A person to understand this story must know Diemer personally or believe my description. If every man in the United States was to be hung for his beauty and strung up in order as he possessed that attribute, Diemer would be the last man, and I would be next to the last. Artie Clare looked at Diemer and then at me and said, "Glen, I know you will not be a failure, for has not Mr. Diemer made a success?" Beekeeping is not the occupation for a sheik. Valentino should continue in movies and matrimony. Us two homely men became life-long friends. He requeneed my black colony and showed me the necessity of slow, deliberate movements. My first and best lesson in beekeeping.

Requires Study

Artie Clare and I spent every spare moment during the winter of 1922-23 with bee books and journals. We learned the axiom of beekeeping that no person is seriously stung unless he plays fool or stands dangerously near while someone else is rehearsing the part. We read those stories which ought to satisfy all lovers of the modern novels. Nature stories, problem stories, mystery stories and sex stories as interesting and far more elevating than those written by the popular writers.

During the swarming season of 1924 Artie Clare hived six out of the seven swarms. So I have the assistance of a good beekeeping wife, or, better to say, a good beekeeping wife has a little assistance from her better half. We now have sixteen colonies, all doing well, far above the average.

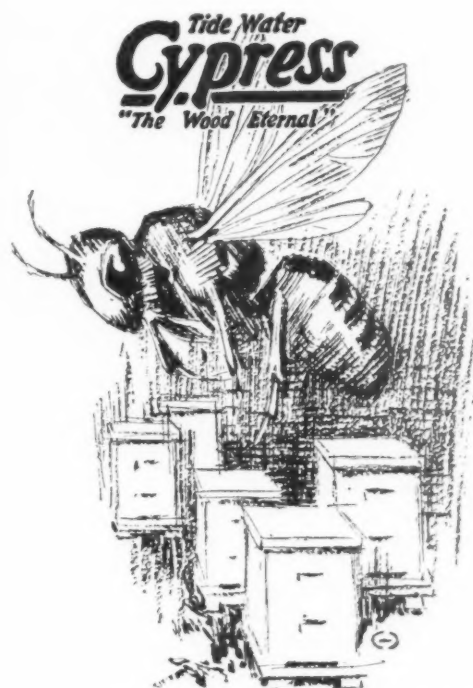
We welcome every beekeeper to our home and we get golden words of wisdom from each.

We welcome every bee supply representative and get only of their best.

We welcome every bee book and assimilate its contents. We welcome every bee journal and read every word, not missing the advertising.

We live with our bees; we love our bees. To us they are the same as our cows and horses—all pets.

I began this story with Jack Rowley, and so end it. I met Jack the other day and told him of my item on "Artificial Pasturage." "What brand do you drink?" said Jack. "Where do you get that stuff?" "From books," said I. I have sent Jack's name to the bee journals for sample copies. If he falls for them you readers going from palms to pines will in a few years pass Jack's trucks moving bees from pastures in the south to pastures in the north, seeking fields of honey instead of fields of suckers. Oklahoma.



Bee-Keepers who also are *Cost-Keepers* will use nothing but all-heart Tide-water Cypress, the true "Wood Eternal."

Its defiance to decay makes it a big money-saver, *figured by the year*.

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Insist on **TRADE-MARKED** Tidewater Cypress of Your Supply Dealer or Local Lumber Yard.

If he hasn't it, LET US KNOW.



Do "Superior" Supplies Satisfy?

Belliston says so—

In a recent interview with Mr. Wilford Belliston, of the firm of Belliston Brothers, operating more than 1,000 colonies of bees at Nephi and Myton, Utah, he stated that he has always been an ardent supporter of "SUPERIOR" supplies, and especially "SUPERIOR" Foundation.

"We have no sagged or warped combs," he told us. "No secrets at all. Just your 'SUPERIOR' Foundation and careful wiring." Virtually all combs in the Belliston apiaries were drawn from "SUPERIOR" Foundation. They also use our new "SUPERIOR" frame wire.

To Our Friends in the Northwest

we are pleased to confirm recent announcements in "BEES & HONEY" to the effect that we have established a branch in Seattle, located at 524 First Ave. South. In opening this branch, we have purchased the bee supply department of The Chas. H. Lilly Co., of Seattle and Portland. Mr. Geo. W. York, former editor of the "American Bee Journal" and now editor of "Bees and Honey," is Branch Manager. Call on him. He can serve you better.

SUPERIOR HONEY COMPANY OGDEN, UTAH

Branches and agencies at Idaho Falls, Idaho; Los Angeles, California; Seattle, Washington; Manhattan, Montana; Delta, Colorado.

Our 1925 catalog will be out by the first of March. If you do not receive your copy during the first week in March, please write us.



Always Dependable



Like the lighthouse, located out there on the rock, that points the way to the safe course, never failing, always dependable—

So Mr. A. I. Root, a student and close friend of L. L. Langstroth, has directed many a person to better beekeeping. He has set up along the course, to guide the beekeepers to profit and success, the modern Standard hive, the honey extractor, comb foundation, the one-pound honey section, etc.—

So beekeepers have come to recognize in Root bee supplies that always dependable quality, that quality that means perfect satisfaction throughout the years. So well made are Root "QUALITY" Bee Supplies that many of our hives, extractors, etc., have been in use for the life time of the oldest beekeepers. This kind of QUALITY is what makes Root bee supplies the standard.

Time has not changed the policies of the founder, Mr. A. I. Root, for his manufacturing integrity is being safeguarded by us under the direction of his son, H. H. Root, or general manager, whose greatest interest is the production of high-grade bee supplies.

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